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ABSTRACT

This set of minutes from a semiannual meeting of the Association of Research Libraries (ARL) includes three presentations: "The Economics of Document Delivery" by Donald B. Simpson, "Electronic Journal Publishing and Libraries" by Jay K. Lucker, and "Policies and Controversies" by Hugh C. Atkinson. Atkinson reviews copyright issues, telecommunications costs, the infrastructure necessary for efficient document delivery, and fees for users. A general discussion of the topics addressed is followed by a set of reports from ARL executives and committees, including a special report from the ARL task force on library education. The first appendix presents a background paper on document delivery by Jay K. Lucker and related documents containing information on the OCLC interlibrary loan subsystem, interlibrary lending in the Research Libraries Group (RLG), private sector non-library document delivery services, a National Library of Medicine (NLM) prototype system for electronic document storage and retrieval, electronic interlibrary resource sharing networks, ADONIS (a proposed electronic delivery project sponsored by an international group of publishers), and the use of Express Mail, commercial courier services, and telefacsimiles for interlibrary document delivery. Also appended are papers on library education by Russell Bidlack and Patricia Battin, who discuss the closure of library schools, librarians' low salary levels, and employers' requirements for both entry-level librarians and the library education process; additional reports; institutional and personal attendance lists; and listings of ARL officers, board members, committees, task forces, and member institutions. (ESR)

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# Prospects for Improving Document Delivery

# Minutes of the 101st Meeting

**October 13-14, 1982**
**Arlington, Virginia**

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# ASSOCIATION OF RESEARCH LIBRARIES

## Minutes of the 101st Meeting

Millicent D. Abell, Presiding

The 101st Membership Meeting of the Association of Research Libraries was held at the Arlington Hyatt Hotel, Arlington, Virginia, October 13-14, 1982.

The program session convened on October 14. After introducing special guests of the Association, Ms. Abell turned the meeting over to Program Coordinator James Govan.

## INTRODUCTION

MR. GOVAN (University of North Carolina): The program this morning is a follow up to the May 1982 ARL Meeting and, we hope, responds to the evaluations and comments we received after that meeting regarding the Library of Congress presentation and preferences expressed about content and format of ARL meetings. We have constructed a program based on presentations by librarians with background material distributed beforehand, and tried to structure it in such a way as to make it into a truly working session from which we may all learn something and exchange a good deal of information. To do that, we have, as you have been notified, constructed small discussion groups for a portion of this program. We will come back together after lunch for reports from those groups and a general discussion. We intend this to be not just a series of reports from group leaders but rather an exchange among all of us that will, in fact, produce a real exchange of information without necessarily coming to a specific position or conclusion.

I want now to introduce the moderator of the program, who has lately been doing real yeoman duty for this organization and I am deeply indebted to him for undertaking this assignment this morning. May I present to you the distinguished Deputy Librarian of Congress, William Welsh.

MR. WELSH (Library of Congress): So there will be no misunderstanding of what we plan to do here today, I am going to read the assignment. "The program session, 'Improving the Prospects for Document Delivery', will explore the possible effects of developing technologies on document delivery and how changes in the current systems might affect individual libraries, their parent institutions, and organizations such as ARL. Three presentations will begin the program: a manager's view of state-of-the-art technologies, including the advantages and disadvantages of each, by Donald Simpson; an update on electronic publishing, including description, prospects, time frame, and library issues, by Jay Lucker; and then an outline of policies that must be addressed if any of the systems described are implemented, including copyright, telecommunications cost, necessary infrastructure, and fees for users, by Hugh Atkinson.

Now, most of the speakers ignored the assignment—

(Laughter)

—but I believe, nevertheless, we have a very good and a very exciting session that will set the stage for the next portions of the program. Jim mentioned them briefly, and I will read that as well and ask that you keep these topics in mind as you listen to the speakers and during the discussion that will follow. After the presentations this morning, we will break into pre-selected groups of 15 for 90-minute discussions. Attendees have been assigned to groups primarily on the basis of preferences expressed via questionnaire. Each group, with the aid of a resource person with specific expertise in the assigned topic, will examine a different perspective or set of issues. The discussion topics are as follows: copyright problems; telecommunication policy problems; economics; infrastructure to support an efficient delivery system; and technological developments

Each group will be asked to explore its topic and attempt to answer the

following questions: What national policy issues should be addressed? What should be the impact on individual libraries and what action should their own libraries take? What will be the impact on their parent institutions and what actions should their own institutions take? What, if anything, should ARL do?

Each of the three speakers this morning will have 15 minutes to present their papers. We toyed with the idea of having a discussion period after each speaker and decided that, since there was some overlap, and we wanted to provide an integrated program, we would hold the questions and discussion until the end. I have selected certain people in the audience and plan, if they are awake, to turn some questions to them. They do not know who they are and neither do I, which ought to make it somewhat exciting.

Before we begin the program, I would like to give you an update on the Library of Congress preservation activities we reported on in Scottsdale last May. Mass deacidification at the Goddard Space Flight Center is proceeding on schedule. The diethyl zinc has now been loaded into the chamber and so the books are being exposed. We expect to have the results of that test next week. The Stauffer Chemical Company, which provides diethyl zinc, and the Northrop Manufacturing aerospace firm that is handling this for NASA, are both interested in seeing this program developed into a national program, and both of them will be submitting bids to the Library of Congress on how this might be accomplished. They are both very well aware that it is not enough to have one vacuum chamber even to handle 5,000 books on the East Coast. On the East Coast we need something that will handle about 20,000 books so we are actually considering building a plant on the East Coast. They are also interested in identifying plants that exist elsewhere to see if we can solve this problem on a national level.

The other element, the video disk, and the optical disk programs are well under way, as well. In fact, we signed contracts last week with Sony for the video disk and with Technicron for the optical disk. The video disk, as most all of you know, is for the most part, off-the-shelf hardware, so we will be into that operation very quickly. On the optical disk, it will take somewhat longer. We have allowed two years, for the experimentation and at the end of the two years the equipment, of course, will be delivered so we will have ongoing systems within that period. But I want to remind each and every one of you that the hypothetical problems that we envisioned in Scottsdale will have to be tackled and will have to be solved—certainly addressed and hopefully will be solved—in this two-year period. So it is happening; it is not just blue sky.

The first speaker will be Don Simpson.

# THE ECONOMICS OF DOCUMENT DELIVERY

Donald B. Simpson
Center for Research Libraries

As I looked at the assignment for this program, I was reminded of the story about a man who walks into a grocery store and, as he looks down the aisle trying to find the carton of milk that he wants to buy, sees another man standing in the aisle holding a large German shepherd dog by the tail, twirling the dog around and around and around. The first man rushes down to the other man and says, "What in the world are you doing?" And the man with the dog says, "I'm blind. This is my seeing-eye dog and I'm just taking a look around."

We are going to take a look around this morning and I might say that, if we are not blind—and I hope we are not—the issues are blinding. I am indebted to Jay Lucker for his background paper, "Document Delivery and Research Libraries,"[1] because it provides the foundation for my paper. The purpose of my paper is to describe briefly the elements and magnitude of document delivery with an emphasis on the technologies, their costs, their advantages and disadvantages. Then I will conclude, as briefly as I can, with a look at some of the models that might be possible for the future development, some of which is already under way.

Nearly all librarians and many library users are acquainted with the elements of today's document delivery system, which has rising costs, problems, and expectations. The function of the document delivery system is to place the thoughts of an author, in some sort of recorded fashion, before someone desiring to know those thoughts at an acceptable cost and within an acceptable period of time. Added to the function is the condition that, if the item is borrowed, it must be returned within the same parameters. Another factor not included in Jim Wood's definition of document delivery[2] is the necessity of balancing the costs of document delivery through the aggregate system. By this I mean that the function of document delivery must include a reasonable sharing of costs among the beneficiaries of the system.

As I have described the function of the system above, its elements begin with the intellectual effort of the author, proceed through the recording process, and end with the settling of accounts following user satisfaction. For the purposes of this paper, and in the interests of narrowing the focus due to the time limitations of the program, the elements of the document delivery system are confined to a subset. First, the paper will deal with the ordering and delivering segment of the system only. This excludes a major portion of the total document delivery system, some of which is highly relevant to improving the system from the librarian's perspective. This means that exploring the overlapping functions of recording the author's thoughts accomplished both by the author and the publisher are areas for potential economy of effort.

The second limitation is to deal only with the external portion of the document delivery system, that portion of local demand that is met by obtaining materials from sources other than the local library. Clearly, the entire question of satisfying the needs of the library's constituent user, whether from local or remote sources, is

the full picture requiring attention of research librarians. Here, too, are potential economies for libraries in the improving storage and retrieval technologies that are emerging. These will not only impact delivery but preservation and collection development as well.

The third limitation on the scope of this paper is to focus on the copy segment of the document delivery rather than the loan portion. Dennis McDonald in the King Report on Library Photocopying states that 42 percent of the interlibrary loan (i.e., document delivery) traffic in U.S. libraries in 1981 involved originals and only 28 percent were filled by photocopies.[3] That conclusion notwithstanding, it is important for this paper to carve out a niche somewhat easier to explore than the total spectrum of the system. One must recognize that the improving technology may offer a better way (e.g., digitalized facsimile using bound-volume scanners) to deliver the original. I prefer to define this process as "copy" rather than "loan" even though it involves the original. Loan, therefore, remains the physical movement of the original item.

The fourth limitation is the concentration on the serials, particularly journals, portion of the document delivery system. The obvious reason for this is the high need due to rapidly escalating journals cost, even though McDonald found that only 34 percent of the 25 million interlibrary loan transactions in U.S. libraries in 1981 were for serials. The need expressed here relates to the special needs of research libraries for journals. There are four discernible needs research libraries have relative to journals: 1) relief from net lender (i.e., photocopier) burden; 2) relief from increasing drain on acquisitions budgets by current journals subscriptions; 3) access to rare, out-of-print, infrequently-used journal titles; and 4) access to quick replacement copies of heavily-used journal titles. Further, the volume of traffic in requests for journal articles and the limited size of the typical journal article document (eight to ten pages) reflect the central position journals have in the exploration of improved document delivery mechanisms.

The fifth limitation on the paper is the nature of the sources for document delivery. In simple fashion, the sources are either commercial or non-commercial. Stated another way, the non-commercial sources are the libraries themselves working in concert—interlibrary loan as the very embodiment of the library's operation of a major document delivery system.

Wood points out that the commercial sources for document delivery are a sizeable segment of the system.[4] But, when I compare that to the total traffic in the system (7 million photocopies in libraries in 1981),[5] I would prefer to stay in the realm of the non-commercial or library sources. Wood goes on to say that he does not foresee a dramatic growth in commercial suppliers at the same time that Don King predicts an increase in journal titles[6] and I predict a steady growth in resource-sharing traffic based on the rise from 1976 to 1981 in the statistics McDonald cites.

Therefore, this paper will look at that portion of the document delivery system that involves the ordering and delivering from external library and non-commercial sources of copies of journal articles. The figures cited above from studies performed by library researchers give some sense of the magnitude of the document delivery system.[7] King provides us with some further data for thought by projecting that while research library budgets rise, volumes added (both books and bound periodicals)

continue to fall; periodicals received are increasing but at a falling rate. The problem is clear: more money for fewer items, which creates a larger expectation and need for effective resource sharing. The glue that holds resource sharing together is effective document delivery. Using aggregate numbers, King calculated a libraries-wide cost for document delivery in 1977 of $20 per transaction, with 58 percent of the cost incurred by the requester.

Present-day document delivery, as limited above, involves the user or a librarian on behalf of the user locating and ordering the desired document from another library or library cooperative and the intellectual content of that item being delivered via a transportation mechanism. The requester and supplier incur a series of cost elements in this process: equipment, labor, materials, and transportation. As Adrian Norman in his book Electronic Document Delivery states, these costs and the portion borne by either party may vary by the document size, the extent and efficiency of equipment and labor utilized, and the contribution of the requester.[8] The aggregate unit-cost, as stated above, was $20 in 1977. Various cost studies have shown that current mail charges may run $.10 to $.20 per page. Emerging document delivery systems using newer forms of technology, such as Lockheed's DIALORDER (tm) service in 1979 had a cost of approximately $.25 per page exclusive of the mailing cost and the basic system use charges. With the typical article running 8 to 10 pages, it does not take long to add up the various unit costs, both direct and indirect (the one most often excluded), so as to arrive at the approximate $2 per page cost. In a word, it is expensive and with the costs of labor, materials, and transportation rising, it will become worse.

Possible future document delivery systems have their major cost elements in common with today's system except that technology changes the mechanisms and, theoretically, the economics as well. Potential savings lie in many areas of the system that I have excluded intentionally (e.g., journal authors recording their thoughts in machine-readable form, which can be utilized by the publishers to produce both a printed and an electronic version of the work, the latter of which can be stored, retrieved, and delivered to a user all from the initial digitalization as enhanced). King projects that such savings might be as much as 56 percent over the 1975-85 period as a result of word processing in manuscript preparation.[9] Whether such savings will reduce the materials cost component of the document delivery system is doubtful given the probable rise in other costs of authorship and publishing. A similar result can be seen for the labor costs in the system in that while labor volume may decrease with increased machine processing, what labor remains will be more costly.

Transportation becomes, in most cases, telecommunications rather than mail or courier. Telecommunications costs are high, but unit costs can be lowered by using existing networks, which tend to be underutilized, and by compressing data (removing unnecessary characters from the data stream).

Norman projects that telecommunications cost per page could come to about $.15 per page, given high volume usage, data compression, and shared networks.[10] This compares favorably with mail charges. Speed of delivery, however, becomes the overwhelming determinant in that rapid delivery within limits of service and cost expectations reduces barriers to such systems for users that want local access. In a sense, access becomes transparent to the user and necessarily so.

The remaining cost element is equipment which becomes more complex in possible future systems for document delivery. Photocopiers that presently cost research libraries approximately $.05 per page, excluding the labor to operate them, are replaced by storage, retrieval, and delivery equipment. Storage media are of three types: magnetic, which is relatively inexpensive and offers the possibility to read and write the data stored; optical, which in its present form is already cheaper than magnetic, but has the disadvantage (some people see it as an advantage) of being read only; and holographic, which is still experimental. The latter is projected to reduce storage costs by a factor of ten by the early 1990s. A typical five-page journal article (originally in printed form, but stored in full text not as a completely faithful duplicate of the original) today costs about $.01 to store on optical disk and $.07 on magnetic disk. That article in an exact duplicate of the original stored in holographic mass storage could cost somewhat less than one penny by the 1990s.

A further aspect of storage and delivery concerns whether the item is captured in full text that resides only in electronic format or is converted to machine-readable form. How the documents are captured is important to cost. Advanced scanning techniques, both in single-page and bound-volume versions, hold the promise of capture at less than one penny per page. Documents originating through word processing recording could have system savings if additional keystroking is avoided. Of course, translation programming for alternative systems could be an additional cost.

Delivery means an output device, which can be located anywhere. Due to the capital investment required, shared installations may be considered. A variety of printers are possible, including impact, thermal, ink jet, and laser. Resolution, particularly because of graphics, is a major point of concern. Intelligent copiers and computer output microfilm are other delivery mechanisms. Given the need for high resolution (i.e., at least 300 lines per inch), improved laser printers are being developed. High volume centers for printing and reduced capital equipment costs as a result of increased market demand for low-cost, high-resolution laser printers could reduce the per-page cost for output to a fraction of today's photocopying costs. All things being equal, Norman foresees a journal article delivered in a fraction of today's time at a cost comparable to services such as DIALORDER (tm).[11]

The juxtaposition posed in this paper is between the existing document delivery system and that which could be as proposed by several models for a future document delivery system. It is important to note that an overnight transition is doubtful. Just as microfilm may be seen someday as an interim storage and/or preservation medium between the codex and electronic text, telefacsimile might be an interim delivery service, despite its relatively poor track record to date. Until economical and technically sound scanners are widely available, telefacsimile may be the best way to move documents from point to point, other than physical transport. New equipment just about to reach the marketplace promises to increase resolution, reduce time (transmission time is the major element of telecommunications cost), expand capacity, and cope with bound volumes.

Although numerous models for an electronic document delivery system are at varying degrees of design, I am going to describe three briefly. The first is the ARTEMIS concept for document digitalization and teletransmission. ARTEMIS, a proposal for the Commission of the European Economic Community (EEC) by the A.

D. Little Company, uses existing technology to provide, through a network of computer and communications links, a conduit via which an information provider can deliver the content of a document to an information user on demand. ARTEMIS is seen as open system that is like a library in that it would gather documents in anticipation of need. EURONET and DIANE (the information retrieval aspect of EURONET), both EEC programs, would be principal entities in the ARTEMIS design and operation. The proposers see ARTEMIS as technically and economically feasible. The system is fully explained in Norman.[12]

The second model, which does not deal with the infrastructure required for a large-scale operation, is the proposal at the Massachusetts Institute of Technology jointly prepared by the Libraries and the Laboratory for Information and Decision Systems (LIDS). This is described by Lucker[13] and an exceprt from the larger report has been included as a background document for this program.[14]

The third model is the one I propose here. It is very similar to the others in that it would deliver the intellectual content of an author's work to a user on demand at a satisfactory level of cost, delivery speed, and product quality. Such a system by its nature would bring an integrated approach to the problems facing research libraries in the areas of collection management, preservation, and document delivery. Documents would be gathered into a decentralized national collection that operates under a rational policy for collections. Location information to assist the coordination of collection development would be facilitated by the existing major bibliographic control systems. These systems could also be the computer bases and telecommunications conduits for the storage of documents in electronic form, the transmission of orders, and the delivery of actual documents or facsimile. Heavily-used documents would be stored electronically via full-text magnetic tapes produced by publishers or scanned by special equipment for that purpose. Moderately-used materials would be scanned and added to the electronic storage as demand warranted. Little-used materials could be transmitted via the system using telefacsimile or delivered in the original, as appropriate. Libraries would formalize their existing partnership in the interlibrary loan system by sharing their resources through formal cooperative mechanisms that seek to establish cost-sharing, too. Delivery would be directly to large users of the documents whose use would warrant the capital cost of equipment. Smaller users would participate in clusters sharing the expensive equipment and depending upon local delivery schemes for final receipt of documents. Locating and ordering of documents would be handled via the major bibliographic systems. The system would have to resolve the four problems that research libraries have in relation to journals as stated above. Such a document delivery system is attainable within the next decade, if work continues as it has already begun.

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2. Wood, James L., "Document Delivery: the Curret Status and Near-Term Future," in Document Delivery, Network PLanning Paper of the Library of Congress, No. 7, 1982.

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12. Ibid.

13. Lucker. "Document Delivery and Libraries."

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# ELECTRONIC JOURNAL PUBLISHING AND LIBRARIES

Jay K. Lucker
Massachusetts Institute of Technology

I have limited my remarks this morning to journals, although it is quite clear that electronic publishing could also have a major effect on such things as monographs, reference collections, encyclopedias, and numerical data. The potentialities of electronic journal publishing are of immense interest to librarians, particularly those serving large academic libraries, for several reasons. First, the prospect of electronic storage and dissemination of journal articles contains a number of intellectual issues affecting higher education in general. Second, there is a real need for faster and more efficient access to current research that might be provided by such a system. Third, there is the hope that cost efficiencies might be instituted that will reduce the rate of growth of library acquisition budgets. Fourth, the potentiality of acquiring articles instead of entire issues would have a beneficial effect on the serious space problems faced by all academic libraries. Fifth and finally, electronic journal publication would be an effective substitute for interlibrary loan; this service, whereby the large libraries absorb an inordinately high percentage of the unreimbursable costs, is neither cost effective nor efficient in terms of time. In general, the possible impact of electronic publishing is that it could change the way research libraries acquire a significant amount of their current information and the ways in which they serve their clients.

It should be obvious to anyone who follows the literature of periodical publishing and its effects on library budgets that there is a serious journal problem. This problem may be characterized by four major features: 1) the escalating costs of periodical subscriptions at a rate considerably more accelerated than the Consumer Price Index; 2) an overall increase in the number of scholarly, scientific, and technical journals published worldwide; 3) a lack of growth in library acquisition budgets that makes it difficult to keep up with inflation, much less with the increased output of information; 4) the difficulty in cancelling subscriptions to provide funds for new titles because older journals tend to cost less than new journals, requiring the cancellation of several titles to generate funds for one new title.

One illustration of the nature of the "journal problem" may be seen from the statistics below, which represent comparative data over a five-year period for the university library members of the Association of Research Libraries.

| | 1975-76 | 1980-81 | 1975-76 to 1980-81 |
|---|---|---|---|
| Number of libraries | 94 | 101 | +7 |
| Total number of serial titles | 2,362,260 | 2,666,527 | +304,267 |
| Total expenditures for serial titles | $50,884,028 | $109,832,813 | +$58,948,785 |
| Average number of titles per library | 25,130 | 26,401 | +1,271 |
| Average expenditure per library | $541,000 | $1,087,000 | +$546,000 |

What these data indicate is that while the average expenditure during the five-year period increased by more 100 percent, the average number of subscriptions increased by only five percent. This chart clearly reveals the tremendous cost to research libraries of merely "keeping up."

In assessing the potential impact of electronic publishing, one can select one of two assumptions regarding the options that libraries will have for access. Simply stated, they are either electronic only or electronic and print. These two possibilities will, however, create a most interesting quandary for research librarians. If journals are published only in electronic form, it would seem logical for libraries to divert expenditures formerly applied to print versions to the new format. Recently some libraries have attempted to do this with abstract and indexing services by diverting expenditures from print versions to online versions, cancelling the print version, and applying those funds to support the new format. The problems, in a nutshell, are: equipment—more terminals are needed if there is additional access through another format; pricing—who pays for the access to the electronic journal, how much does the library subsidize; the need for intermediaries, since most of the online abstracting services are not yet in such form that untrained people can use them easily; and, finally, the impact on cost and price. We have not yet seen the latter, but if many libraries start to cancel subscriptions to the print version, will the print version be eliminated and the online version go up in cost? Will the online version carry more of the cost of the total operation than it does today?

If, however, both print and electronic versions are available, libraries will most probably continue to subscribe to the older format, creating a situation where the user may have to pay for an individual article generated by an electronic journal data bank. Should the latter situation prevail, faculty members and students will inevitably have to make a choice whether to purchase an article electronically or rely upon the library subscription for information. The choice would probably be made on the basis of speed of delivery and cost, assuming the availability of funds.

Librarians have a number of questions regarding electronic journal publication. One asks how individual articles will be priced when total sales cannot obviously be gauged in advance; this situation compares unfavorably with traditional methods of pricing journals based on total projected costs and advance subscriptions. A publisher who is going to publish a journal has all of the money in advance and knows how many subscriptions he or she will have during the year, divides the total cost by the number of subscriptions, and then prices the subscriptions. The publisher does not care how many times an article is read or, indeed, if an article is read at all since all the money comes in up front. A second matter of interest is the impact on cost of the loss of advertising, an assumption that is probably valid in many scenarios.

Should the electronic-only option be adopted, several advantages are immediately apparent. It seems likely that libraries, assuming they would serve as the principal ordering agent for articles, would provide the article to the user for retention rather than maintain a file of "ordered and received articles." The beneficial effects of such a system on what publishers view as a copyright problem should be apparent.

Another matter of concern is the need for quick and comprehensive abstracting tools that would replace the current browsing of tables of contents. With the

absence of immediate access to the source document, users will want more substantial information than normally appears in titles. Synoptic abstracts, possibly available online, preferably prepared by the author, and ideally distributed in a subject-oriented collection, seem highly desirable.

Several other issues are also seen relevant at this point. One is that access to information by libraries and their users will become increasingly more attractive than ownership, especially for current scientific and technical research, but the existence of an excellent and reasonably-priced delivery system is imperative.

Electronic journals do not necessarily have to contain full back files of articles for extended periods. It is conceivable that the electronic journal online will contain only the most recent five years of articles with earlier collections converted to microfiche and sold on subscription to libraries (and individuals). Indeed, if economic viability is to be reached, it appears essential that maintenance of only a limited online file be utilized.

As members of the academic community, librarians share with their faculty colleagues concerns about electronic journal publishing and scholarly research. Briefly, the questions involve first the publication of work in progress as well as completed research. If work in progress is to be published, will there be the danger of premature exposure of research results and will scholarly journals (the conventional kind) be less willing to publish the later version? How will articles be refered if they appear only in electronic form? Will scholars be willing to referee online? What about access to terminals? Will there be a tendency to publish everything because of the comparative ease of publication?

Let me digress from my prepared remarks to just comment on an article in the October 6, 1982, Chronicle of Higher Education*, which some of you may not have seen dealing with one particular electronic journal publishing organization called Comtex. (I did refer to Comtex in my background paper.) Let me just read a few paragraphs.

> Comtex, based in New York City, anticipates a slow start, but hopes eventually to issue one new journal a month until it reaches its current target of 36 in various scientific fields. A year's subscription will cost from 500 to $600. Initially, they will be available only on microfiche. By early 1983, however, Comtex expects to have them stored in a central computer to which subscribers will have access.
>
> Comtex journals will have little in common with the print periodicals of today. Instead of the usual collection of articles, reviews, and correspondence, they will offer only progress reports on research in scientific fields from environmental engineering to geotechnology. Each "issue" will consist of one report. . . .
>
> Traditional journals generally submit articles to peer review--evaluation

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* Winkler, Karen J. "New Company Plans 'Electronic Journals' That Can Be Read on Computer Screens," The Chronicle of Higher Education. 6 Oct. 1982, pp. 25-6.

by outside experts. Comtex, however, plans to rely solely on its own editors and editorial boards to select reports, which will be published promptly and in full without editing.

Opponents fear that electronic journals will become what Mr. Day [President of ISI Press] calls "the garbage heap of scientific publishing." Simon Silver, professor at Washington University in St. Louis and editor of the Journal of Bacteriology, says: "Some of us are afraid it will get to the stage that anyone who wants to publish will be able to." This view is fueled by Comtex's plan to pay its author an honorarium, which is rare among traditional journals. In fact, some scientific periodicals require an author to pay them.

"Most of us in science," says Mr. Day, "believe in the 'value added' theory of publishers. We as publishers perform a useful function beyond marketing. We applaud the intellectual formation of a product. We protect against plagiarism, and we make the style clearer. You cannot do away with these checks and balances." . . .

Some editors of traditional journals say they may refuse to accept articles based on research that has been previously published in an electronic journal. Even if they do not go that far, Edward Ziegler [an editor of one of Comtex's journals] says it isn't easy to get authors to think about publishing through Comtex. "Some of what we do now is just reassuring people that it won't hurt to publish with us."

The software to be used in the Comtex system, however, is still in the experimental stage. For example, Frederich Plotkin [President of Comtex] says no one yet knows how to put into machine-readable form the graphics that should accompany many reports.

Electronic publishing is here and we have to face the issues. From the perspective of peer evaluation, other questions must be considered. Will electronic publication be seen as publishing (for promotion and tenure decisions)? What if no one ever requests a particular article? Is this some measure of scholarly attainment? Or nonattainment? Is there a danger that frequency of purchase of an article will be viewed as some institutions now view frequency of citation? Will publishers report sales of individual articles, and, if so, to whom? Only the author? I know we have at least one dean in the audience who might be interested in knowing how many times an author's article was ordered so he can see whether he should promote that person or not. Will prices of individual articles rise astronomically, given the fact that there are relatively few readers of the average article? Conversely, will only articles with a large, known audience appear in the electronic journal?

While the question of the possible lack of advertising was raised earlier on economic grounds, librarians also have serious concerns from the intellectual point of view. Advertisements, especially in scientific and technical journals often contain important information about scientific apparatus and about new books and other publications. Indeed, what will happen to features of scholarly journals like book reviews, letters to the editor, and obituaries? Who will buy these items? And, more important, who will pay to have them "published"?

Finally, if that were not enough to worry about, librarians and scholars should be concerned about the following: the linkage of electronic journals with online bibliographic data bases (i.e., the possibility of accessing a bibliographic citation online, identifying the desired article, then immediately ordering the article from the electronic journal data base without going to another terminal); the role of the library and the librarian in both the publication and the dissemination aspects of electronic publishing; the question of international access to journal data bases and the concomitant question of telecommunications across national boundaries; the need for standardization of formats for access protocols and for hardware. And let us not forget the microfiche problem.

Whatever the future of electronic journal publishing, the collective concerns of publishers, scholarly societies, faculty and, not least of all, librarians must be brought to bear upon a myriad of problems, and this would best be done before this exciting prospect becomes a reality.

## POLICIES AND CONTROVERSIES

Hugh C. Atkinson
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All of the current discussions about document delivery contain the underlying assumptions that there will be a widespread and continuing use of physical delivery systems of one kind or another, and that the volume handled by these systems is going to grow and grow. I, too, believe we should be planning for a volume which is growing but, if anything, is underestimated. Such may be because it is assumed that document delivery systems will be similar to those which we have now: U.S. Mail, courier services, crude telefacsimile, and the like.

I believe we will have to deal with a significantly larger than expected volume and with new delivery systems. For instance, in Illinois—it is a long state, remember, running over 300 miles from the northernmost university to its southernmost—we have a statewide delivery system which handles a volume of 600,000 items per year at less than a dollar an item. That is somewhere around 50,000 items per month with a standard van delivery system and multiple routes for less than a dollar an item, not $2 per page. In our case, five years ago we were borrowing—not lending, borrowing—6,000 to 8,000 items per year. We are now borrowing at a rate, last month, of 50,000 items a year. That increase has come almost entirely from people who did not go through the standard interlibrary processes. Almost all of the increase occurred in the borrowing generated immediately at a circulation desk when it was discovered that an item was not available, and done automatically through the same shared computer system rather than by filling out a separate form. These cases lead me to believe that the volume of interlibrary loan will continue to increase, not just linearly but in large jumps.

One problem that I do not believe will be particularly difficult is the often-raised issue of copyright. It seems to me that the essential failure of the Copyright Clearance Center as a device for large academic libraries to meet their appropriate responsibility points to a future system where copyright clearances and payments are handled at the point of sales rather than the point of use. The extraordinarily wide dispersion of individual uses of journals and other library materials makes the mechanism for keeping track of a small number of uses in many locations uneconomical in itself. The clearances and payments will have to be provided for in the basic price of an item as it is sold to libraries.

One of the assumptions in Jay Lucker's paper about electronic publishing is that in some cases one would dial into a centrally-stored system context. That is not necessarily true. The marketing of Comtex as it goes on may well sell the whole package to a library so that we redistribute it, much as we do journals now. In that case, I believe we must recognize that keeping track of who is buying it will be a problem. But, as far as I can tell, it is simply going to be a non-issue, mostly because we are dealing in a world which will be basically self-service, as our self-service photocopying is. That is why it becomes such a difficult problem. There are, however, many real issues and I believe those surrounding communications, centralization of distribution, and the definition of what publication is will be affected on both the economics and policy levels.

We are a society shaped by the Bell Telephone System. It seems to me that we cannot conceive of telecommunications without automatically thinking of either the outline of a bell in a circle or Mercury standing on a globe, a distinction which simply describes how old one is rather than two different systems. All of the competing local telephone systems, Telex, packet switchers, and the like, are submerged by the concept of the telephone company. The Bell Telephone Company and its Western Electric equipment has shaped our vision because it is efficient and relatively inexpensive. It is so successful that it has completely dominated not only the market but the mind. With the Supreme Court ordered breakup of the Bell System and the advent and rise of other companies filling in the vacuum created by the U.S. Postal Service's inability to meet the demands on it, we will find, I believe, a world rapidly changing—one which is not as easy to deal with or as safe as it is at this very moment.

With the exception of the one or two devices for cutting the telephone bill in the realm of personal and business data communication, such as MCI or TYMNET, we still think of either the telephone or the mail as the basic forms of interactive communication. The rise of massively-stored data requires not only the document delivery systems that we have seen and heard of, but a system in which the delivery system and the communication system are one and the same. Usually the delivery systems, communications, and storage systems all match one another at any given point in the history of information transfer. We are at the moment when we are seeing a dislocation in those three essential pieces. We have seen a future storage medium (the optical digital disk) which seems to hold the solution for the storage problems that have plagued us since the Second World War when print on paper finally became so inefficient that it caused us truly serious concern. We have projected a future of real change in the devices which store data and the optical digital disk is only one.

The University of Illinois applied for a patent last month for a device which will store data at roughly 10,000 times the density of present disk storage. I do not know any more details on that, but I do know that if we are getting such patents, so are numbers of other institutions. While it will take us two to five years at least to see the advent of new devices—and that is probably true even of optical digital disks, which may have a one- or two-year lead on the other devices—we have on the drawing boards other forms of data storage which may rival the optical digital disk in density and abilities.

The problems that libraries are going to face will be similar to those that we faced in a very small way with the advent of the new recording devices just after the Second World War. Most libraries I know of have somewhere in the basement a wire recorder. It was not wrong to purchase such; it just turned out that that was not the hardware which prevailed. The tempting solution to the problem of competing hardware is to do nothing and to wait, or to place one's hope in some national standardizing agency which will provide a straightforward, honest, and rational solution. It is pretty clear that neither posture is appropriate or realistic. The content of the product will determine what we have to purchase, whether it is the standard one or not. That is, if in fact the American Chemical Society decides to publish in a particular format, we are going to have to buy it, whether we like it or not, whether it is the standard or not. The increasing difficulties with our own devices for bibliographic control, for storage, our problems with buildings that are already full and staffs which are not large enough to service them will probably

force us to make commitments before the judgments of history are clear.

These changes will require a different approach to library budgeting. We have to assume for our budgets a five-year life or even a three-year life for most of the devices we acquire. That, of course, is a giant change from our present system in which we assume perpetual life of both the materials in the libraries and much of the equipment used to provide access to them: catalog cards, catalog cases, Cardexes, and the like. Even the automated circulation systems, cataloging systems, and acquisitions systems have been assumed to have a permanency. It has probably always been true that we have not provided equipment for libraries in a logically budgeted fashion. But when it comes to the new technologies that failure becomes intolerable.

Just as a library's "data base", the collections, are controlled by a massive combination of people, catalogs, inventory systems, shelving, and buildings, we have in the electronic world data base management systems, which are rapidly and constantly changing. The issue is not only distributed computing but distributed data bases, distributed data base managing, and data base machines, that is, machines built for data base management. The hardware is rapidly overcoming both the economics and the technical problems of the massive data base. The management of the data base itself will be the challenge. And it is a challenge being spoken to by both the vendors and the institutions which are trying to manage data bases. That particular problem will be so dominant that we may see the rise of computers that are in fact designed not to do computation but to manage the data bases.

The most likely telecommunications solutions will be regional or, even more likely, statewide and state supported, if not completely state funded. Telecommunications systems may well be developed for a wide variety of educational, governmental, and similar agencies in which the state or region has a vested interest. The problems facing the libraries in data communications are very, very much like those facing the state police department, the register of driver's licenses, the regulatory agencies, the highway department, the school systems, the health care agencies, and the economic and financial institutions. The basic investment costs for a broadband system probably can only be handled by some kind of consortium of all of the agencies. The technologies are not the problem. They all seem to provide the capability. It is rather the cost of the initial building of the system which seems almost insurmountable now. For individual libraries I believe that simply working with another state agency, and especially a non-educational agency which needs and may already have in place a data communication facility, should be the first step. The agency which provides motor vehicle licensing, the state police, or some other similar agency may provide a basic network and the political alliance which will ultimately result in the fabrication of the needed communication network. I believe it is incumbent on all of the members of the Association of Research Libraries, whether they are public institutions or private ones, to start to work very closely with their state library agencies and state libraries to begin the process of weaning ourselves away from the telephone company.

The issues of centralized and decentralized networks strike me as being likely to solve themselves in the process of designing new telecommunication systems. At least the future points very clearly to the relatively inexpensive available machinery to store almost any of the bibliographic data and texts that we may need. The two key problems of the development of communications and the development of the

data base managing programs are hardware. Some of the networks, of course, will by their nature be formed by the financial and political constraints that are inherent in the institutions themselves. It seems to me there will always be a network of federal libraries. There will be networks of publicly supported libraries within a given state because their funding comes from that state. In states which have an active public library network, that network itself will influence the academic libraries that reside within the same political borders. But more importantly, there may not be a real difference between a decentralized and a centralized system. The communication devices and concentrators that make the actual machine in which a data base resides to be as meaningless as is the place where a book or journal resides when using an electronically-directed interlibrary loan system. A data base seems to be right inside any terminal when it is displayed there.

More important, it seems to me that in this area are the problems which will occur with the massive distribution of personal computers and personal terminals. The personal computer is now $600 from Texas Instruments, and no doubt after the first of the year price cutting by the rival firms will follow. It is the expectation in almost all cases that these personal computers and personally owned terminals will have access through telephone lines and dial-up ports to the various machines that the owners wish to access. OCLC has recently had to triple the number of dial-up ports it has simply because of the rise in the number of terminals available to its members. That growth is going to be small and insignificant compared to the growth that one can expect in the next two or three years as the personal computer and the terminal become commonplace.

The problem is that the basic computational management throughout the country is not prepared to provide massive amounts of dail-up ports, nor is it prepared to design the hardware and software so that the security of the programs and the operating systems are at least reasonable. It is my belief that almost all of our circulation systems are so vulnerable that when some 18-year old in the engineering department gets a personal computer for Christmas, he or she will, within about an hour and a half, figure out how to erase the fines of all his friends. That genius will also probably figure out a way to order books for personal use without us ever knowing we are paying for them, and perform hundreds of other equally outrageous activities that we cannot anticipate. As we are becoming more dependent on computer-assisted instruction, that same person will figure out ways to steal the examination electronically. I shudder when I think of the danger that the widespread availability of personal computers is to what we have always thought as reasonably secure and reasonably managed computer-based systems. We will probably have to build a kind of dial-access interface which may screen both incoming and outgoing traffic to make sure that it does not interfere with the operation of the machine itself, and this may lead to difficult questions of privacy.

As we start to use machines and small computers more and more, the distinction between a public document and a private communication will probably disappear. If we write each other memos which have the same machine characteristics on the word processors or the personal computers as the articles we write for publication, I fail to see how we will be able to draw the distinction. We will probably also have to build a network of private communications which dies or self-destructs in some way so as to have some guarantee of privacy, since the nature of the media will do anything but guarantee that privacy. Such a change may well require us to think in terms of confidentiality and privacy in an entirely different way.

The policies that libraries have always worked under are going to be under attack on a whole broad spectrum of issues, and I believe we can identify several of them already. The first is private ownership. Even now our students really seem to have a hard time telling the difference between their own institution and an institution they are visiting. I look at the number of visiting students in our reading rooms on a weekend, and know the number of our students who must be sitting in Northwestern's library or the University of Chicago's, and I cannot seem to get across to them that there is, in fact, a difference. If they do not recognize the difference and the faculties that teach them do not recognize the difference, all our efforts to make those differences explicit will probably be subverted one way or another.

The rise of the OCLC interlibrary loan system, as well as the many statewide interlibrary agreements, to say nothing of local consortium, have blurred the distinction of individual ownership in the minds of almost all of our users. They recognize where books are housed but I do not think they recognize who owns them. Furthermore, our society in general has in many ways decided that information is a public commodity, not one owned by those who generate it. Even though the copyright laws seem to say differently, the freedom of information concept is one of non-ownership. All of this is not yet fully explicit either legally or socially, but it seems to me that it is affecting the way our patrons act in libraries and, certainly, as more information, books, and journals are stored electronically rather than as physical items, that distinction will become even less apparent. It is much easier to recognize that somebody owns a physical item than that one can own the words on a computer screen.

The papers for this program all touch on some aspect of resource sharing. The various rules that we have over the years laboriously compiled to provide both reasonable and efficient resource sharing activities will probably have to be completely redone. Even now we see the effects of online bibliographic access in the radical altering of interlibrary loan activities. That alteration is often in conflict with the protocols that have been established.

One of the more interesting effects of the rise of the new mass storage technology is the likelihood that the various interinstitutional agreements, even more especially the informal and unwritten interinstitutional cooperative activity, will undergo a radical change. Most of the agreements are done within a rational system, perhaps a political one, certainly an economic one, between institutions. They are in place to further the individual institutional goals. They are primarily based on a concept that suggests that in certain cases both institutions will benefit. It is institutional benefit which has determined the cooperative agreement.

With the case of the newer technologies, there is less institutional benefit than personal benefit. Individual students and individual faculty members, because of the nature of the system, find them to be of individual benefit. It may be that such networks and such individual gain may be in conflict with the institutional goals. We probably are going to have to start developing policies which reflect the reality of how our patrons are reacting and which provide our institutions the best deal possible, rather than acting from institutional goals first. Inevitably there will have to be some kind of quid pro quo, but I fail to see just what it will be.

Many of us in the Association of Research Libraries will discover that the new

technologies that solve some of our economic and space problems may provide to "rival" institutions the ability to compete with us directly for our students. Most likely we will see a continuing rise in those new, aggressive, sometimes out-of-state institutions competing for masters degree students and professional students in the areas of commerce, education, and some of the other professions and arts. The new technologies may be the electronic means to supplement essentially meager institutional resources with uncontrolled access to the resources of a larger and more well established institutions. It seems to me that the state accrediting and licensing agencies, as well as the regional associations, have to take cognizance of such in their accrediting and licensing activity. We also are probably going to have to build procedural rules which require a firm contract between the owner or provider of library service and the institution which is offering the degrees. Quite often those institutions tell their students that they must make their own arrangements; that simply will not work.

It is certainly conceivable that the research library of the future may well own no books and no journals, but rather own access to a wide spectrum of materials. The measures of the quality of library service certainly will have to be revised and measures of output be used rather than the measures that are so prevalent in the ARL Statistics. The policies which are based on the status of the user, as faculty, student, staff, visitor, and the like, will no doubt undergo drastic revision, since I suspect they may become unenforceable in what is clearly evolving into a self-serve world. In some ways, some activities are clearly leading to a far more centralized rather than simply decentralized world. (By the way, it is that self-serveness that I believe is going to present us most of the problem, as we will no longer intervene between the patron and his access. This is most likely to be the case in online systems. Then the controls we have traditionally imposed will just disappear.) It is the responsibility for preservation, for instance, for indexing and cataloging, that will probably feel most of the force towards centralization, even though they may not all be centralized in some institutions. I would think that the U.S. Book Exchange would be an endangered species, as would the antiquarian journal vendor. Most likely the reprint industry would also suffer sharply in a world of electronic transmission of full text.

Lastly, we should be aware that we may be participating in the creation of a whole new class of exploited people, usually women. The owners of early mills and factories did and said the same things that we now hear from the people who own the massive data entry operations. The nineteenth century photographs of rows of women at looms seem very similar to the present photographs of rows of women at terminals. I am not so sure what our responsibility in this area is, but I know it is to not participate in that without being cognizant of it.

I do console myself with the thought that no matter how radically the library world changes, and no matter how much access and availability improves, there will always be that faculty member who forcefully points out how much better it was ten years ago at his previous institution. And there will always be that student whose dog has just chewed up the book, the microfiche, or the computer printout.

MR. WELSH: We were just handed the results of the survey and it proves something we probably all knew. Based on attendance this morning and attention this morning, people from west of the Mississippi tend to doze more than people from east of the Mississippi. The only exception to that are the people from west of the Mississippi who smoke. They were alert. There was an interesting sidelight—all Canadians were alert during the whole program.

Just to recap, Don Simpson described the state of the art as he sees it and set forth several proposals for the future. I should note that he modified his approach so that he was talking about a journal document delivery system. Jay Lucker spoke about the electronic journal and raised some very interesting questions. Hugh Atkinson raised a number of very interesting policy questions.

I wonder whether we were not just a little bit too futuristic. I discussed this point with these gentlemen this morning. Don said that he did not believe that an overnight transition was possible. But as a matter of fact, I believe we are all aware that many of the elements of the system that he was talking about are in fact in place. We have to remind ourselves that we have come a long way in bibliographic control and, even though there is much more to be done, certain things are already being done and the role that the Council on Library Resources is playing has been most helpful in that regard.

I was told yesterday afternoon that on September 22 the group working on the ADONIS Project decided to go ahead. We are in optical disk technology. It is not even five years from now, it is certainly not ten years from now, even though one gets the feeling that we are talking about a ten-year look down the road. We are talking about something that is going to happen to us in some way, shape, or form in the very near term. We may not have our first optical disk until late this afternoon but you can be doggone sure that we are going to have it. Very soon we are going to have to find a way to cope with it, and many of the things we discussed at the May 1982 ARL Meeting in Scottsdale are going to be problems we must address. The bibliographic problem, the subject access problem—how will these affect your libraries?

As I said earlier, LC has signed a contract with Technicron. Technicron was also one of the firms that was working with ADONIS, though I do not know who ADONIS has chosen. We must be alert to the fact that there are going to be certain precedents established, standards probably will begin to develop, and we will be faced with an AACR 3 down the road if we are not very, very careful. One of the first problems we at LC have already discussed with Martin Cummings of the National Library of Medicine is that ADONIS came to us and discussed signing a contract with us to avoid the copyright problem, working out an arrangement with us which included the usual subscription fee for this type of service, plus an amount built in that would cover royalties. Now, I believe we are smart enough to realize that we must be very careful in what we do, but probably before we can get the first optical disk we will have to sign some sort of arrangement with ADONIS. That is going to affect, to some extent, some of the questions that Hugh and Jay raised this morning without any really concerted discussion.

It also occurs to me that—and here I am going to sound like a real old-timer—we will have to deal with the NPC. If we had done this a couple of years ago, we would have many of the things under way that we talked about this morning for the future. It is something that we could have put in place, we could have had operational. I believe the Arthur D. Little Co. did us collectively a great disservice by its comments about waiting for the technology. There is nothing new today from what there was two years ago. The mechanisms will change but what we intended to set in motion a couple of years ago could in fact be in place now. If the technology had in fact changed, we could have simply changed with the technology, and we could have been solving or addressing some of the problems of interlibrary loan. I believe we should have the courage to go ahead in some of these areas.

I assume there are quite a number of questions. There is no particular need to confine your questions to the three papers or even to the background material; we should range as widely as possible in our questions. So who is going to start? Somebody from California who just woke up, please.

MR. GRATTIDGE (General Electric Foundation): Would the speakers like to comment on document delivery within the university and the extent to which they will be working with computers or other dissemination devices, and whether the development of those systems will in fact not be prototypes for the larger ones?

MR. ATKINSON: I do not believe they are really prototypes. We now have a document delivery system on a relatively massive scale, probably 12,000 or 15,000 items a year, and it is carried out simply as an option on the paging slip that is generated through the circulation system and uses campus mail. It turns out that the level of use is not as high on the campus as I would have imagined when I first started the system, primarily because most people do not decide that they want something until they want it immediately, and they then come over to the library and look for it. There is, however, a growing group who will borrow this way, because of distance, physical handicaps, or a dislike of a particular library or librarian. Students use it in the dormitories—they seem to use it on a basis that I can not make much sense out of, but they do use it.

By the way, I have a comment on this. I believe the concentration on the journal as a deliverable item as the main problem is a little suspicious. Most of us remember, when we look at our circulation figures, that our monographs account for about half of our circulation, although we cannot be sure because nobody knows how much use is made of the journals in the buildings. We spend about half of our budgets on journals. When we get to interlibrary loans, we say that something like 80 percent of our borrowing is journals and that strikes me as something wrong. Most likely, I believe, it is that the journals have by far the best bibliographic access. If the subject access to the monograph world gets anywhere near as good as the journal world, then we will be back to the same mix we now see over our circulation desks, and that is a different world on those electronic deliveries.

MR. WELSH: If that works, I see no reason why we should not then be able to exploit the nonprint material we have in our collections that is not exploited outside of the institutions.

MR. LUCKER: Bill, let me comment on what I call intralibrary document delivery, which is one of my main concerns. I believe that it is a major issue at

many large research libraries that have decentralized library systems on campuses that are spread all over the place, not to mention units that are considerable distances away. One of the elements of the electronic document delivery system that we have been working on at MIT includes an intralibrary document delivery system. It includes the ability to scan at a series of remote locations, transmit full page documents to other locations, and have these documents reconstituted at the other end almost instantaneously. The benefits obviously would be the reduction in duplication and also the reduction in delivery time. So we are including in our proposal, for which we are presently seeking funding, not only the ability to transmit full page from library to library but within a library. Our model has at least four inter-intra-MIT linkages; three on the campus and one, which would be an interesting experiment applicable to other libraries, in which we are planning to link electronically the MIT campus and Lincoln Laboratory, which is about ten miles away. The interesting factor there is that in the average year we provide the Lincoln Laboratory staff with 60,000 pages of photocopy. If we can do that electronically I believe we can demonstrate both technological and economic feasibility.

Internal document delivery for a lot of us is as big a problem as external document delivery. It has economic implications, it has time implications, and I am not sure that I would say that all of the devices we might use internally are applicable over distance. For example, we are looking at two methods of transmitting the data. One is highspeed, leased telephone lines, 54 kilobit lines. The other is microwave. Microwave is exceptionally practical for transmitting this kind of information, but it is line-of-sight. Interestingly enough, we can transmit from the MIT campus to Northeastern University or to the Harvard Medical Library by line-of-sight, but we cannot transmit to Lincoln Laboratory because Belmont Hill is in the way. We probably will not worry about that initially, however. If it turned out to be economically feasible, we could put a repeater station on top of Belmont Hill, pick up the signal, and relay it to Lincoln very economically, though we do not know who is living up on top of Belmont Hill at the moment.

MR. SIMPSON: I cannot add a great deal to what my colleagues have said other than to illustrate what I think is a very serious problem in this regard. You will note in my paper that I purposely narrowed my topic to a bite-sized chunk of the major issue and excluded what I would call the internal delivery within the library or on the campus. But one of the things that has come to my attention in the last few months is that some of our institutions are not using the most advanced technology that is available for delivery of materials, or even for requesting those materials. While at CRL we can bring an article halfway around the world and have it at a library in ten to 12 days, the faculty member who requested it might not come to pick it up for three months. So the library is not willing to spend the money for that particular level of service when the user is not interested in getting it on a timely basis. Now, there are a lot of things that one could challenge in that and try to figure out just why it happens, but that may be a major part of the problem in internal delivery.

MR. WELSH: Thank you, Don. Questions? Pat.

MS. BATTIN (Columbia University): I have a question that is not exactly on the document delivery question but on the implication for collection development of the ADONIS Project. Are we thinking that if, indeed, this is successful, then in the libraries we could subscribe to the hard copy of these journals and discard them at

the end of a year, and that the costs of maintaining large journal collections could be transferred to paying the costs of providing this service to our users? I ask it in this way because I do not know myself. Are we satisfied with the implication that the control of all of this information will pass from the university libraries to the commercial sector? It seems to me that is a major issue we have to face and I do not have the answers.

MR. WELSH: You are right. This is one of the questions that needs to be addressed. You began with the assumption—as I think Jay did—that libraries are going to acquire both the hard copy and the electronic counterpart of it. I do not believe that is, in fact, a given. What we are trying to create is an atmosphere where you can sit at a terminal, call up the bibliographic information, and when you get the citation you want, punch a key and get a copy on the screen of the data for which you are looking. If you want a printout, you can go through that next step. Why do you need the hard copy? Why not, for certain material, face this head on and get rid of the hard copy—simply do not acquire the hard copy initially?

MS. BATTIN: My only question about that is scholarly habits, and whether there is a transition period that we must go through.

MR. WELSH: You remember we talked in Scottsdale about the attitudinal problem.

MS. BATTIN: That is right.

MR. WELSH: But most people in a major library are not comfortable coming in and using microfilm for newspaper where you do not keep the originals?

VOICES: No.

MR. WELSH: You say no. Collectively you say no? I said newspapers. Do you still say no?

MS. BATTIN: I would say that with scientific information, there is a lot of scanning of the current year publication; not if you are doing citation work or historical work, but rather the new things coming out. I do not know. I just raise this as a question that we must consider.

MR. WELSH: I believe, as Jay suggests, we are doubling our costs and, as a matter of fact, probably more than doubling, by considering acquiring both the hard copy and the optical disk. As has been suggested, and we will talk about this in a moment, if there is a royalty payment built into the cost of the optical disk, then you would be paying for more than double the cost. We must consider this very carefully and try to work around the attitudinal problems. At LC, all of our current newspapers right now are retained on microfilm. There are only some that are now in the original and we are trying to eliminate that practice.

MS. BATTIN: But the second implication, Bill, is that the responsibility and ownership of the scholarly information for the nation moves from the university, the scholarly community, to the commercial community. Are we ready to accept that?

MR. WELSH: I do not know.

MR. McDONALD (University of Connecticut): I thought that was the important part of the question. As usual, Pat has anticipated me. I would like to ask if Dick Chapin is here?

MR. WELSH: No, I do not see him.

MR. McDONALD: If not, that makes me the elder statesman of the ARL and, believe me, I am feeling my age this morning as I listen to you all. The whole tone of our discussion is different from what it used to be.

I believe that Pat has hit the nail on the head. This question of the ownership of the scholarly records and the bibliographic apparatus is a crucial one. With scholarly societies abdicating and the commercial publishers taking over many of their journals, with the advent of electronic publishing, and, presumably, with the profit motive dictating whether a journal will continue or not, we have a very different kind of situation in the world ahead. That applies to the bibliographic citations, which are now in data bases, not a part of the public sector, and that applies to the LC shelf list. There are quite a number of things and we have begun not yet to look at where this takes us. I would commend to your attention a paper on some of these issues written by Basil Stuart-Stubbs.*

What I hear here is that we are talking about articles that are eight to ten pages in length; we are talking about ADONIS or we are talking about ARTEMIS; we are talking about document delivery at MIT between one laboratory and another. It used to be that at the ARL we had some concern about the humanities and social sciences. I know that is old fashioned; we do not think in those terms any longer. But I would like to ask our panelists whether everything that they have said today applies equally in the various segments of the scholarly record.

You see, I did have a question after all, Bill.

MR. WELSH: Thank you, John. Who wants to handle that? Jay.

MR. LUCKER: I will try. You have a very good point, John. My own perception is that science and technology will be first because of two reasons. One is the escalating cost, the other is the nature of the fields in which speed of communication may be more important than accuracy of information. It is clear, if you look around, you are going to see that most of the emphasis is on science and technology. My own feeling is that the speed with which disciplines adopt electronic publishing will be in direct proportion to the ratio of the importance of journals to monographs. Therefore, the second field will be the social sciences and the humanities will be the last field in which you will see electronic publishing adopted because of the low ratio of journals and the generally lower per title subscription rate.

But once this thing catches on, I have a very strong feeling that this is not a zero sum game in terms of the publishers' perceptions. They are not in this for love.

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* Stuart-Stubbs, Basil, "Scholarly Communication and the New Information Order," Canadian Journal of Information Science 6 (1981): 109-21.

They see this not only as an adoption of new technology but as increased profits. For example, Comtex is selling stock on the stock exchange—people are buying anything and $6 million dollars worth of stock was sold. People are not buying that because they love libraries. They see it as a great potential for increased profits. So I believe that it is going to happen in those places where the immediate return of capital is going to be more evident. It will be slow, but I believe that, over time, it will hit every field for which we are responsible.

MR. WELSH: But I do not believe, John, that it is really fair to blame publishers. Electronic publishing, in fact, is not new, and it is not something that is going to happen tomorrow. When LC began the second cataloging-in-publication (CIP) experiment, we naively thought we were going to get manuscript copy. This was ten years ago, and we were told, as a matter of fact, that word processing equipment was necessary. (We did not call it word processing equipment then, but manuscripts were prepared in that fashion.) The process began many, many years ago, and I beleive it began without regard to whether material was scientific or not. As a matter of fact, I beleive it was totally in your particular field. But the point I would like to make is that our interest in optical disk technology is to preserve the record, not to let it be destroyed.

MR. McDONALD: Bill, I do not blame the publishers. I commend them. They are doing things that we should have done. I believe, though, that when scholars lose control of their own literature—and I believe that is happening, whether they know it or not—this has some serious implications that we just have not faced. I believe that is one of the things Pat was saying. No, I do not blame the publishers for being opportunistic—that is in the nature of the beast.

MR. ATKINSON: John, I do not believe you have to worry about the American Chemical Society (ACS). Whether that is really scholarly ownership or not I suppose is debatable, but they are not likely to let go of control. I do not believe ADONIS presents much of a threat in that field. I believe that ACS will continue to dominate it and will probably own it.

By the way, I believe that the humanities may be one of the earlier full text areas.

MR. WELSH: Yes, right.

MR. ATKINSON: Because, after all, it is the machine-readable text itself, not the scholarly publication, that presents an opportunity for further scholarly analysis. We now know that many of the concordances, say of the classics, are produced using Cornell's quick indexing features. We have online availability of those texts. The Shakespeare canon, the basic classical canon, are already in machine-readable form and most of the 18th century plays in the British and American literature will be there in the not too far distant future.

MR. STROWD (Duke University): Don Simpson mentioned something that reminded me of a thought I have had about the faculty member who comes in and picks up the item that he ordered on ILL three months earlier—or maybe does not come in at all, even though he has been alerted to the fact that the item is there. One of the concerns that we have about all of this is cost, and costs are geared to volume. I wonder if we really know or if we perceive the usefulness of the material

that we handle. I say this because of Don's remark, and because, from my own experience, and I am sure all of you have observed this, you know what happens when you reduce the costs for in-house photocopying. Everybody goes wild and copies everything they get their hands on and then you see it in the trash can ten minutes later. Or in the case of interlibrary loan, photocopies come in and people do not pick them up, or when they do you see the copies a little while later in the trash can beside a carrel. What I am saying is that we do not know to what extent the material that we furnish by whatever means is really used. I sometimes wish that we had some way to screen effectively the need for material and the use to which it is put. Of course, this would be impossible or very difficult. But it does affect what we do and it affects cost very decidedly.

MR. WELSH: David Ladd, the Register of Copyrights, has a question.

MR. LADD (Library of Congress): I would like to ask a couple of questions about questions which have been raised, and I ask that no inference be made from these questions about what my position might be. My questions relate to losing possession of the literature and to scholarly habits.

On the first question we have, of course, and have had for decades as a part of our copyright law: the requirement of deposit in the Library of Congress as a condition of protection. Now, whatever the modality selected, if we achieved public possession in the Library of Congress or another central repository that made it impossible for the supplier of a commercial service like ADONIS to suppress or destroy the record, would that be an adequate safeguard to meet the concern that private control could be used for censorship or any other purpose inimical to the scholarly discourse and community?

My second question relates to whether the alternatives are reliance solely upon the electronic data base or reliance upon the electronic data base plus the acquisition of hard copy. I wonder whether there is not a third possible alternative—reliance upon the electronic data base and the circulation not of a hard copy, but rather, circulation of an expanded abstract-like index? I ask this because in the journals in my fields to which I personally subscribe, I scan the table of contents to see two things: is there an article here in my area of interest or is there an author here whose work I am interested in following. One could do that on the basis of an expanded abstract-like index and then rely upon the electronic data base.

MR. WELSH: Pat or John, do you want to answer the first part about the copy that would be deposited in the Library of Congress, in those instances where the publisher produces both the hard copy and the electronic form?

MS. BATTIN: There is a lot here that really has to be thought out. I am concerned not only about the control or the possession of the information but about the servicing of it. I say this from the experience that I have had in the last couple of months. There are a lot of costs involved with providing information to the scholarly community. Many of us in the library profession are just beginning to understand how great those costs are, because they are hidden in many ways by the kinds of subsidies that we have employed in the past and the way we have provided information. The temptation is very great to add a little bit here and a little bit there, what the market will bear, etc., etc., and I believe the cost is great even for those of us in the nonprofit sector. That is all I am saying.

When you then talk about moving into the commercial sector, where there is not the sympathy for the final objectives, we will be into an environment where we have lost control of the economics of this whole activity. The fact that there is the copy in the Library of Congress is a very fine safeguard, but the question is whether you would be prepared to provide some kind of a service to the scholarly community for the people who did not want to pay, if a monopoly has charge of providing access to that information.

Because I always seem to cause controversy when I get into these discussions, let me just go a little bit further and talk briefly about the—

MR. WELSH: Are you going to become more controversial?

(Laughter)

MS. BATTIN: I just want to use as an example the misunderstanding about the Eighteenth-Century Short Title Catalogue (ESTC) charges. I know this is going to be discussed more fully at the next ARL Board Meeting but this is a case in point, it seems to me. The British Library has assessed a surcharge that has nothing to do with the way we provide that service here in the United States. That surcharge is justified on the basis that the British Library needs those funds to continue doing what it is doing. Does it or does it not? All I am saying is that when you get involved in this kind of thing you can set any kind of rationale for what you have to generate in income in order to continue to provide the service. I believe those are serious questions that we must consider before we lose control of this process.

MR. WELSH: Another example is our concern about University Microfilms holding so much of the negative or master copy microfilm. I am still not satisfied that we have an answer to that.

MS. BATTIN: That is exactly the same thing.

MR. WELSH: Yes, it is indeed. Let me remind you, though, of something LC said at Scottsdale. As far as we were concerned and you were concerned, we were using two applications. One was mass deacidification. We said to ourselves that we knew there were certain materials that we wanted to keep in the original format and, therefore, we had this solution. We also knew instinctively, we hoped, that there were other categories of materials, formats, that we did not need to keep in the original, this area being a good example.

If you have microfilmed a newspaper at Columbia and thrown away the original, did you lose something in the process? I gather from what you and John said—

MR. McDONALD: You are missing the point.

MR. WELSH: Thank you. Then straighten me out, please, John.

MR. McDONALD: I will see if I can find a simple example. I have Philip McNiff here, who, out of his Boston perspective, may be able to help me. A scholarly society based at Harvard published Journal A. It no longer felt it could afford to do that, but John Wiley decided that it could publish that journal. Okay so far?

MR. WELSH: Yes. Go very slowly though, will you?

MR. McDONALD: Fine. Credit to John Wiley for taking this risk. On down the line, however, John Wiley discovers that they made a mistake, that this is indeed not a profitable journal. They are ruled by a somewhat different ethic than the scholarly society based at Harvard University and they decide to close that journal out. Now, that is what I mean by scholars losing control of their record.

MR. WELSH: Right. Do you want to say something Jay?

MR. LUCKER: I wanted to answer the second part of Mr. Ladd's question about the substitution of abstracts. I said in my paper that it is essential, if there is going to be electronic publishing, that there be an intermediary form to alert people as to what is available, and that synoptic tables of contents or extended abstracts are important. I believe they have to be timely, they have to be subject oriented, though not necessarily journal by journal—that would be very cumbersome. But it would be useful if we could get collective synoptic abstracts distributed, collectively focused—an extension, for example, of Current Contents. What is wrong with Current Contents is that, while it is very good as an alerting device, the next step is to go to the journal itself and scan the article. You do not have that anymore. You are going to need a more substantive intermediary form that says this is what this is about, to tell you if it is worth going through that next step of requesting the electronic journal. Tables of contents alone—and I would say even current author-prepared abstracts—are inadequate. We are going to have to develop a new mechanism. I used to believe that the computer could do this for us. In fact, there were some experiments in the 1950s at IBM on automatic abstracting. But as a minimum the author or somebody is going to have to prepare a more detailed abstract that tells me whether that article is sufficiently important to me to go to the next step of requesting the full article. The abstract indexing service will provide similar service but we are still aware that there is a time delay.

You are quite right that this change in publishing format requires a new invention. I would argue that it is not a substitute for the ultimate article, it is an intermediary device.

MR. WELSH: We have time for two more questions.

MR. VASSALLO (University of New Mexico): I have a question concerning the economics of journal publishing, specifically the question of libraries subsidizing journal publishing through the much higher subscription rates that are charged to libraries than to individuals. We did an analysis at the University of New Mexico and discovered that 35 percent of the journals we subscribed to charge as much as five times more for institutional subscriptions than for personal subscriptions. How do you see this being changed by electronic journal publishing?

MR. LUCKER: Not at all.

MR. SIMPSON: Let me make one brief comment. The prices for journals are really market driven. You are paying what in effect you are willing to pay, even though you do not like what you are paying. In order to get out of that, it has to be expressed that you are incapable of paying or unwilling to pay that higher price. Yet the market will still drive it. You are the market. If that is circular reasoning, it is

circular reasoning. It is a very complex problem that may have a possibility of being sorted out once we see what the real costs are, as the hidden costs become less hidden and more obvious. But I am not really certain that type of phenomenon is going to be changed at all by movement over to a different type of process.

MR. WEDGEWORTH (American Library Association): Just a comment and a question. I would like to emphasize some of the policy issues that Hugh laid before us, because it seems to me that, as we go along, the technology is still going to be the driving force, with service and economics as the primary benefits. The real problem is how you can insure against those risks that we assume in taking any particular technology at any particular point in time.

In that regard, I would like to emphasize what Bill said earlier. We are going to have to take some risks if we are going to move forward, and many of the questions that have been raised about access and ownership are indeed very complex questions that we will not be able to answer satisfactorily for the future. It reminds me of the story about the fellow who was convicted of trying to steal the king's horse, and, pleading for clemency, said he would teach the king's horse how to speak if given a year's reprieve. The king was stunned by this and granted the request, but the minister came and said, "Do you really think you can do this?" The man replied, "Well, there are a number of options. I may die, the king may die, the horse may die, or I may teach it how to speak."

As we look forward to the risks that we are taking, the question I would ask is do you believe we are using the leverage of the total library community, of all who will benefit from these technological developments, to guard against some of the risks that we are going to incur by adopting one or the other technologies. Are we using that leverage to produce greater economic advantages for the community as a whole by bargaining for lower rates from, say, the telecommunications services and the like?

MR. WELSH: I would say categorically no, we are not that well mobilized as yet. We hope to be.

Thank you all.

## AFTERNOON DISCUSSION

[Following the morning dicussion, meeting attendees divided into discussion groups to consider document delivery and potential ARL actions in five contexts: economics, technology, copyright, infrastructure, and telecommunications. A resource person was assigned to each group to provide specific expertise and to insure the most informed discussions possible.]

MR. GOVAN: In this session we want to reap the benefit of this morning's discussion groups. There are common themes that run through all the group topics, and therefore we hope that you will not hesitate to ask questions or make comments, even if the topic being reported on was not the one assigned to the group you attended. The people reporting on the sessions are not going to be exhaustive about what went on within the meeting; we would like general discussion of the issues raised so we can benefit from those cross-topical themes. The whole point of this exercise has been to focus our attention and alert us to some issues that are becoming increasingly immediate. Therefore, we should not expect to arrive at any specific answers or conclusions, but, rather, to get the full benefit of considering these ideas and perhaps in the end to make some suggestions on how ARL might prepare to meet these issues as they become more immediate.

I am indebted to those who led the group discussions and particularly to those who have volunteered—or been coerced—into reporting on the sessions at the meeting this afternoon. We thought that the most logical sequence would be: technology, telecommunications, copyright, economics, and finally, the infrastructure. In line with that, our first report will be from Calvin Boyer, who is representing the three groups that considered the technology question.

MR. BOYER (University of California, Irvine): We librarians in the groups may have bested the economists, for our three groups produced nine basic pressing recommendations on technology. Our groups agreed that there is a scarcity among us of technical information and, to a lesser extent, a limited amount of more basic theoretical information or conceptual information about technology.

After hearing in Scottsdale* and again this morning about optical disk technology, a basic question posed in our group was: When does one make the decision to go with the new equipment, specifically in our group's case, the optical disk technology? Our resource person had a very simple answer: not yet, although the Library of Congress is pressing ahead and we are certainly indebted to them for their research and development. For us as library directors, the opportunity to go out and buy a system which we can afford is a little way down the pike. Our resource person described very briefly a potential optical disk technology configuration in the $20,000 price range: a scanner, a printer, and a controller. Yet, although pieces or components of that configuration are available in the marketplace,

* See "New Preservation Technologies: Report from the Library of Congress." In In Service to Scholarship; Minutes of the 100th Meeting." Washington, D.C., Association of Research Libraries, 1982.

our resource person underlined the great desirability of a turnkey system, one sold and maintained by a manufacturer.

It was very difficult for all three groups in technology not to spill over into other areas, whether it be economics or telecommunications. So I want to limit the observations or recommendations that we made basically to a more narrow focus, if I can.

Our three groups felt collectively that it was important that ARL enhance its own position so that we may assume a more central role in policy-making as it develops with respect to technology and information transfer. Close on the heels of that recommendation—that the Association maintain and enhance its role in policy-making—one group suggested very clearly, very strongly, that standards for technology be developed in advance of use. ARL must take a lead in emphasizing the critical nature of compatibility. We can forestall some of the problems, another group noted, by publicizing technological developments within our respective libraries, whether that be through a communication medium like the Chronicle of Higher Education or other possible avenues reaching academic decision-makers.

All of the three groups noted that there is a tendency on the part of the college or university president to suggest that our library of today will not exist in the Year 2000. Yet there is a healthy skepticism, I believe, on most of our parts, that indeed much of what we see in our library will continue to exist, although incremental changes will occur, and technology will enhance our opportunities and our role within the university and within the research community to deliver information. Certainly, surfacing more than once was that nagging question: If a user can acquire a terminal which can be linked to a data base, is there really a need for a library as a middle person? I believe it is quite practical for one engineer or one scientist to construct a data base and effectively retrieve from that data base one of 25 or 50 papers when the same person is both building the data base and retrieving materials from it. As the data base grows, however, and the person inputs materials unfamiliar to him or to her, the researcher encounters the very essence of what librarianship is about and has been since its very early days.

Other matters of concern or recommendations: that ARL foster a move on the part of library education to put squarely in the middle of the curriculum the impact of technology upon libraries in its many forms; that there needs to be a thorough, ongoing examination of the changes in the structure of libraries as technology develops—in whatever form it takes—in our many libraries; that ARL, through its efforts, identify those other agencies who could bring about the recognition that this concern which we address is indeed a national priority—its applications, its ramifications go far beyond the walls of the library. Thus a specific recommendation growing out of one group was that we identify means by which the Association can cause various governmental agencies and other communities within our nation to recognize the centrality of this problem to the welfare of the nation.

The last recommendation or concern that was common among the groups was investigating the impact of technology upon scholarship, a question which was raised this morning by more than one speaker.

I certainly welcome comments from the other discussion leaders in this group of three, if I have overlooked something.

MR. GOVAN: I was interested in that idea of standards before we begin to use the hardware. I am not sure how you do that. Have you got any light to throw on that activity?

MR. BOYER: As recorder, I am thankful that that idea came up in one of the other groups. Margaret or Kaye, can you address that?

MS. GAPEN (University of Alabama): That comment came from my group and it came from one of our nonlibrary people. I would like to ask him to talk about it as he had a very pithy quote that he used to support his point.

MR. GRATTIDGE (General Electric Foundation): My quote was that the American approach to standards is to let 1,000 flowers grow and then choose one of them.

(Laughter)

You only have to note color television, records, and videotape. Other countries do not do it that way; the Japanese consider in advance what it is they are trying to do rather than choosing afterwards.

MR. GOVAN: I wonder if you could respond as a representative of the industrial side of things. We have often been inhibited by the fact that we did not believe the library market had sufficient clout to swing any weight with industry. What would be your opinion about that?

MR. GRATTIDGE: Let me make a disclaimer. I would hate to think that that is considered a business point of view, particularly on standards. I believe the library is big business. That is why all these manufacturers are now looking at you and why the commercial people have got into the business. Information is now valuable, and we have five years to do something about it. I say five years because that is the period of time during which Baby Bell must stay out of offering information services at a price; Bell has already indicated its interest in that kind of activity. So I would think that the time scale is clearly set.

MR. LUCKER: Let me point out what is already obvious to most of you, what has happened in such previous technologies as microimaging, the number of different kinds of microformats, the number of kinds of readers and printing equipment. Let me also point out what has happened with online data bases. Look at your online searching operations and see the number of code books, the number of manuals, the number of different systems that are required to access the different data bases. If we want to let that happen again, it will.

Now, there are two kinds of standardization we are talking about. One is equipment standardization. If you are going to have to access different kinds of optical discs or different kinds of machine systems, just think of what it would mean to have 19 different terminals and 19 different readers. But there is also software compatibility, such things as machine languages and protocols. I agree with Walter [Grattidge] that while we may not be the biggest business, the biggest market, we are not the smallest market any more either. We have to stop apologizing for our size and start exercising some of our influence. We represent not only ARL libraries, we represent the whole library community—special libraries, public

libraries. We also represent the tremendous world of scholarship and scholars who are going to use this material either through us or on their own.

We do have a tremendous amount of clout and I believe we should start talking with a collective voice. Otherwise, we will repeat the sins of the past. Look in your microreproduction reading rooms, look at your online searching operations to see what the results have been. I am not sure we will be successful, but I believe it is worth an investment of our time now. This is the foot in the door. If we wait a year or two, we will be back at the starting point. I would not guarantee success, but I believe after enough experience we know what the mistakes were in the past; I believe it is worth a try for ARL, along with other library organizations. It has importance not only for technology, but also for economics, our own economics. I believe it is worth the investment of our time.

MR. WELSH (Library of Congress): An opposing view. I too do not believe we ought to commit all the sins of the past, except some which I enjoyed very much.

(Laughter)

The strength of this great nation of ours, however, does not stem from creating the standard in advance. And I shudder to think what would happen, even among friends here, if the Library of Congress suddenly decided it was going to impose a standard in advance. I believe a standard must evolve. We ought to be conscious of the high price we pay for nonstandardization, but the strength of this great country lies in the reverse.

MR. GOVAN: Thank you, Calvin. The next topic is telecommunications. Charles Churchwell will report for that group.

MR. CHURCHWELL: The telecommunication group, with the assistance of its resource person, came to the conclusion very early in our discussions that the consent decree which Judge Green announced some weeks ago has created an enormous amount of confusion and uncertainty. The group recommends that because of the confusion and because of the lack of adequate information to arrive at any meaningful conclusions, ARL should do at least three things very quickly.

Since as whatever the end result is, research libraries would still like to communicate with each other and their patrons as cheaply as possible, ARL should assign telecommunications a top priority. It should do that by either creating a standing committee or rearranging the configuration so that this topic can be assigned to an existing task force. That should be a top priority. Second, if our group could be considered a microcosm of the entire organization, we believe very strongly that ARL should develop an educational approach of some kind, set up a mechanism by which we all can gain a better understanding of all the aspects of telecommunications. Third, and perhaps most important of all, our group concluded that ARL must take whatever action is necessary to formulate and articulate a policy position on telecommunications. The group believes very strongly that action should be taken in cooperation with other organizations, especially those in higher education. These, then, are the specific recommendations which came out of our group.

One of our resource persons was unable to participate, but he has agreed to

share with us now some comments that might facilitate our discussions. So before we open our discussion, I would like to ask Joseph Ford to comment on telecommunications and libraries.

MR. FORD (CAPCON): Thank you, Charles. I am the Director of the CAPCON Library Network, a network that provides OCLC and other system services to 47 libraries in the Baltimore-Washington area, including two APL libraries. My apologies to the telecommunications group, as I arrived later this morning than I planned.

I would like to support the three recommendations of the telecommunications group. They are sensible, valuable, and, I believe, probably urgent. Judge Green's consent decree of August 24, 1982, left several issues unanswered: the policy of the American Telephone & Telegraph (AT&T) breakup and the eventual effect on all of us who use telecommunications for bibliographic transmission, for patron search, for assistance in serving our scholarly research community. That consent decree left a large number of organizations as potential commentators on any eventual settlement. The 109 or 110 organizations who have filed to comment on future developments would be wonderful allies for the Association of Research Libraries. And I would think in that event, Charles Churchwell's comments just now about looking for other organizations as allies is right on the button.

Another point that we all are facing, I believe, and perhaps not knowing it, is that the divestiture plans which come out of the consent decree are being created right now. Some of the analysts in Washington who have been following this issue say that they expect the original or a first cut of a divestiture plan as early as January of next year. That means that all of us who are interested in this issue have to be ready to look at it, examine it, analyze its impact on us, and be prepared to get ourselves on the record as soon as possible. We are likely to see the private sector, AT&T and the Bell System operating companies which will be spun off, become very, very powerful. And again I emphasize the points: Get on top of it, find out what is happening, organize yourselves, and find and make alliances with some friends who are already working on the issue.

MR. CHURCHWELL: Thank you, Joe. That is the end of my report.

MR. GOVAN: Could you, Joe, answer the question of what the role of the Federal Communications Commission is going to be in all of this? Will they be able to provide any restraint on what may occur when this empire breaks up?

MR. FORD: Well, that is a good question. First of all, when Congressman Wirth withdrew his telecommunications legislation, the by now infamous H.R. 5158, which would have given a great deal more consumer-oriented thrust to the breakup, he said that he would bring it back. (That legislation was popular in the House except among a group of legislators who believed that the breakup would affect their constituencies.) He withdrew that in July of this year because of the lobbying efforts that were under way. But he promised to come back after re-election in January and put this legislation back on the table. Judge Green's decision appears to give some states and local organizations more oversight, and that is why Congressman Wirth said he wanted to see a larger federal role in this area. H. R. 5158, as it was proposed, would reserve for the Federal Communications Commission a good deal of oversight. But we are right in the eye of the storm just

now and the exact thrust and the exact shape of things are not very well known.

MR. McDONALD (University of Connecticut): I am struck by the difficulty of educating ARL directors. And I wondered if the group would share with us some of their thoughts on how this might be done, who might do it, or the best means for bringing us the word.

MR. CHURCHWELL: I would just like to say that sometimes identifying the problem is the most difficult part. The work that the program committee did in pulling this meeting together, in getting out to us as much information as they did before this meeting, is a step in the right direction. I would hope that at some ARL meeting, if my colleagues agreed with me, we could have some seminars where knowledgeable people can work with us in smaller groups over long periods of time so that we can cover all of these issues. Whether that would be feasible or not, I do not know, but I think it would be helpful.

MR. GOVAN: Thank you, Charles. The next issue is copyright. Ed Holley will be reporting.

MR. HOLLEY (University of North Carolina): It is at least comforting to know that not only library school deans and faculties need to be educated, but that ARL directors need to be educated, too.

(Laughter)

When I left the program this morning, I was comforted by Hugh Atkinson's remark that copyright is a non-issue. And then I looked at the people who were to be in our discussion group and I knew it was an issue.

(Laughter)

There was generally a consensus, I believe, that we must solve the copyright problem; it will not go away. We cannot afford another bloody battle such as the one we went through to get the Copyright Revision Act of 1976. I believe there was a consensus, although I am sure not unanimous, that we should move on from old issues.

Martin Cummings of the National Library of Medicine suggested, and the group in general agreed, that we must deal with the signals that are being sent by the publishing community, particularly the Association of American Publishers' (AAP) response to the King Research Report for the Copyright Office. AAP in essence rejects the King data, and indicates that what they want is: 1) to force all libraries to join the Copyright Clearance Center, 2) to adopt a more restricted definition of systematic reproduction, 3) to put a copyright in the circle on every copy, 4) to eliminate the CONTU guidelines on fair use, and 5) to tighten the rules on photocopying serials. The suggestion was made that if we do not at least enter discussion on those issues, it is very likely we will be back in the legislative arena addressing them there. There does seem to be a need to find some kind of accommodation.

I believe a key recommendation might be that we talk with publishers to ask if this perception of their stand is indeed correct and to try to establish some kind of

dialogue. There was a suggestion that maybe this ought to be done with a small group of people, and I would add from my personal point of view, maybe an entirely different cast of characters on both sides.

Does the medium make a difference in dealing with copyright? I believe there is a general agreement that yes, the medium does make a difference when you begin to talk about technology and document delivery as it involves ownership of literary property. One of our members said that DIALOG has just announced full text availability and so forth, and it was pointed out that the move to the new technological systems probably means payment at point of use. That is a different kind of stance from ours; as you may recall, our colleague Hugh Atkinson said this morning that he thought we would continue to do it at point of origin. Our group was not at all convinced that that was going to be viable in the future, with the technology that will be available. The ownership of the object, despite the fact that we seem not inclined to deal with it, will still be a problem and very much a problem if you get into the royalties of paying for copies that come over your terminal, as in the case of DIALOG in its full text. That is already here and we will deal with it and we will be paying for it.

One of the other suggestions was that we need an inventory of the copyright issues posed by the new technology; that needs to be undertaken as quickly as possible.

With regard to the ARL involvement, we suggested that the Executive Director of ARL continue to spend lots of time on copyright, whatever may be her personal inclination, and that some members of this Association, along with other associations, continue to be involved with that issue. In addition, some of the things that this group has to bring to the discussion of that issue, of a whole series of issues in relationship to the copyright problem, are: that it represents user group needs and does speak for a user group, that it does have strong relationships with the scholarly community, that it can deal with the issues of the learned society publications which emphasize dissemination of information for the good of scholarship and not necessarily for the money involved.

So the final summing up is that ARL must continue to monitor the developments in the copyright area as it involves technology, to work with interested parties, and to try to reach a resolution of some of these issues. I am fairly sure I have not covered everything, but that is the gist of it.

MR. GOVAN: Any comments, questions? Thank you, Ed. The next topic is economics. Richard Talbot will report.

MR. TALBOT (University of Massachusetts): As you may imagine, many of the things we talked about have already been touched upon. But the most general conclusion, I believe, that we reached in the discussion on economics is that many of the issues we face can be best addressed by creating an economic and planning model which, together with the assumptions needed to create it, would serve as a vehicle to influence the scholarly community, to educate our own administrations—maybe even to educate ourselves, and to facilitate coherence in library planning within the university planning structure. Consequently, we urge ARL to begin promptly the development of and swiftly conclude an economic and planning model, preferably in conjunction with some elements of the scholarly community.

Flowing from this should be specific initiatives for action. One, for example, might be that we would urge CRL to play an active role in ADONIS-like initiatives and, with the aid of ARL, to be more active in facilitating resource sharing and document delivery. We believe it is especially important for ARL to take initiatives to insure permanency of materials produced electronically only; we are assuming that libraries will continue to play a role in this. Perhaps something like this might evolve into a bigger and better ERIC. In conjunction with this planning role, we believe that ARL should set up a policy planning group which might assist in creating the model and in monitoring its continued implementation.

In a narrower sense, we believe that ARL needs to take a more active role in interacting with publishers. We should do this as soon as possible in order to avoid an acrimonious situation like copyright, although perhaps these things are inseparable from copyright.

Finally, someone raised the question of who has the responsibility for paying for all of this: the library, the consumer, or the user?

I hope that fairly sums up what the groups talked about. If it does not, please correct me, anyone out there.

MR. GOVAN: Any comments or questions from others? Thank you, Richard. Finally, Joan Chambers will report on the infrastructure.

MS. CHAMBERS (Univeristy of California, Riverside): I am reporting for two groups. Both groups discussed a very wide range of topics, many of which have already been mentioned by the first four reporters. It was evident at least in my group that the members had read the background documents and were conversant with topics and I would like to reiterate what Charles said about the benefit of having this information in advance.

Interestingly enough, when the discussion in the separate groups focused on what might be the appropriate role for ARL, each group independently recognized that an infrastructure already exists to accommodate document delivery. More accurately, each of our libraries is involved in a number of overlapping and intertwining infrastructures. It was suggested that the most constructive action ARL could currently take is first to identify more accurately the problems with or failures of the current infrastructure; and then to address these problems. This might be accomplished, first of all, by structuring our surveys related to interlibrary loan and document delivery in such a way that the problems and failures can be more readily identified. Second, through the Association's Interlibrary Loan Committee, we could develop and support policies and protocols that would result in the most favored and most liberal treatment of ARL libraries. We could extend priority in responding to member libraries and agree to standardization of policies and protocols which would facilitate this. In my group the example was given of the liberal policies that have been agreed to by the RLG libraries in relation to interlibrary loan. They are certainly more liberal than the ALA interlibrary loan policy. These suggestions, however, were not intended to preclude charging for interlibrary loans.

The advances in technology are likely to evolve within the existing infrastructure. The groups believed that whatever improvements we can collectively agree to will facilitate document delivery both immediately and after this

evolution.

I would like to invite either Donald Koepp, who chaired the other group, or members of both groups to add whatever they might like to about the discussion.

MR. KOEPP (Princeton University): Let me just report on my attempt in the group I was in, which I do not think worked very well, to try to focus on the whole question of why we fail. It is conceivable that we exaggerate the degree of failure. But even if you agree that there is failure, we do not seem to have any clear notion of why. We seem to feel that the only thing that is going to solve our problems is the identification of new structures. We kept coming back to the fact that we have already invented and developed and founded and established and funded a rather considerable number of structures. So why is the solution to the problem always the invention of a new structure? Well, it is probably because we cannot identify very clearly why the existing ones fail.

We did discuss some aspects of that in the sense that libraries as organizations are bureaucracies with built-in problems with regard to work flow. We did discuss, to some extent, the proprietorship that seems to grow up around the instruments that we develop, that they are regarded as provinces of particular subgroups of libraries and it is very difficult to reach across those lines. But it seems to be a question we do not want to address. And yet I am convinced that it is important to address that issue.

Look at another area of interlibrary cooperation: the absolutely incredible development of machine bibliography over the last 15 or 20 years. There is no question that it has made immense strides and that if anyone had told us at the beginning of this period that we would have what we now have, we would have regarded that person as some sort of impractical dreamer. Yet it is there and it is in place.

That is not to say, however, that those systems do not have certain inefficiencies built into them, which I am convinced have little or nothing to do with the nature of the technology. They relate very directly to the fact that it is human beings who are operating these systems. I do not envision a day in which we will completely overcome those problems, but I am convinced that we do not choose to address them, we do not seem to be able to focus on them as problems. In the long run that is going to be essential in order to make document delivery work anything like as well as the current methods we have for sharing just bibliographic data.

MS. CHAMBERS: Would any members of the two groups like to add anything to the report?

MR. PINGS (Wayne State University): I was in the group with Don. We did discuss our failures. But what I am convinced of is that the infrastructures now in place depend upon goodwill and a whole series of other nice words that we have to describe our cooperation. Our failures come when a person changes position, place, or other things. These are social issues, personal issues, power issues. As somebody in our group said, we probably already have enough money to create a sound infrastructure, but we do not have a mechanism—and I do not know any other word for this—to make our infrastructures dependable because of the changes of people and institutions. We cannot provide the continuity.

Can ARL bring continuity over a period of time that cannot be vetoed by just one institution? Things like that have indeed occurred in our bibliographic control and in our document delivery. How do we build continuity? How do we evolve rather than react? Can ARL do something about that?

MR. TALBOT: I think that is precisely our suggestion in the economic planning model. We believe that it is not necessary to create new structures as such. What is necessary is to animate the existing structures and to separate them to some extent from the personalities involved, to create a planning focus and forum that would be much more specific than that we have now and that would lead to specific initiatives. The role that ARL could play could be fundamentally a coordinating one with those other agencies that have operational roles, such as CRL or OCLC.

MS. CHAMBERS: Are there other comments or questions from anyone else in the audience?

MR. GOVAN: I would like to ask Don a question. Was there any discussion in your group about what information in this form is going to do the organization of research libraries? To put it more explicitly, in a way that relates to the thought that came out this morning about scholars losing control over their records, I believe librarians are going to run the risk of losing control over their collections or over information. Sometimes I get the feeling it is sort of like Thurber's idea of electricity leaking out all over the room.

(Laughter)

When you think of all the different information agencies on a campus these days, the library is just one among many, and electronic information is going to further that trend. I wonder if there was any discussion of that kind of idea.

MR. KOEPP: We indeed did have some discussion of that, and Pat Battin said most about it. Will you recapitulate that, Pat?

MS. BATTIN (Columbia University): What we were discussing in our group was the concept of moving out of the library perspective within our institutions and viewing the need for, the level of, and the quality of information services from an institutional perspective. We should take the lead in institutional planning. We should work with university officers on the kinds of services, the kind of structure the university has to develop in order to cope with these problems, and the kind of economics they involve. I see the library profession, the librarians, as leaders in that kind of an activity. And it is very different from our role in the past.

But I quite agree with you that it is leaking out all over and that we are in danger of developing electronic departmental libraries if we are not careful, because people are buying data bases here and there and everywhere. It is scholarly information and we have a responsibility for the planning and costing and all of that. I believe very strongly that the initiative is not going to come from our university officers, that we are going to have to take it. And ARL can do a great job in developing the policy analysis that Richard talked about to help us.

MR. ROUSE (Oklahoma State University): I know that what the discussion has led to here has been the origin of the information and the literature. But there is

the other end of it, the receiving end, and there may be something that you are doing at home on your campuses to control the receiving of electronic information.

A little bit is being done on my campus because of an astute assistant vice president with whom I talked about the multiplicity of computer terminals all over the campus. He formed a data resources committee, and the result of that has been a data resource center in the library. This is nothing more than a control of what is happening on our campus, pulling together, identifying, cataloging all of the terminals and the sources and information services that are coming into the campus. We now have a room in the library set aside for this service, a person assigned to it, and a terminal and telephones and whatever. Maybe some of you have done this same thing.

MR. KOEPP: Our group had some discussion of the relationship between the economics of information distribution and, on the one hand, the role that the United States plays in that worldwide and, on the other hand, a more provincial view of what role libraries and campuses play or the money politics of our campuses as that relates to publication patterns. I will address the latter and I will ask Hank Edelman to say something about the first of these issues.

The question of control of scholarly information and the academic enterprise's interest in that is one which I saw rather clearly this morning when we were talking about the increase in acquisitions budgets, particularly for serials, and the possibility of using those funds even within the sciences. Let me stick strictly to the sciences. My sense is that American university libraries are spending a lot more money for serials because people who make the final decisions with respect to allocations of resources on our campuses, namely the faculties, want us to. It has nothing whatever, I believe, to do with our budget requests or what our presidents think, or a variety of other things. As a matter of fact, presidents always think differently from faculty and, by and large, lose in that battle.

This morning I was trying to sort out in my own mind what the political role of the librarian is in the development of those resources and how that is going to work with electronic publishing. My sense is that the scientists on my campus, and on every campus I have ever been on, are probably the most conservative group when it comes to form of publication of journals. And that is true because journals are where their business is. They see the conventional publication with its bright shiny cover and its method of production, which is not too far from Gutenberg, as being absolutely integral to their whole guild. They are not about to settle for anything less. So while I believe one could demonstrate in the economic scale of a research library—which, after all, from the point of view of most of the research scientists on our campus is peanuts—while I believe I could demonstrate great economies, at least potentially, through electronic publishing, even if it is not tied to user charges which are totally different from what we are used to, my sense is that the group on campus which ought to be most interested in that is, for emotional and scholarly reasons, totally disinterested in it.

So my question is in terms of the inevitable struggle over allocation of resources. How much luck do you think you will have in working with the physics department on an increase in the budget to support your access to electronic publishing? I would not have any luck at all, quite frankly, because that is not the way they want to see it. I may be wrong in that and it could be that success will

change their attitude. But they are a pretty conservative bunch and you certainly do not change them overnight. I am always startled by the rather radical difference between the young physicist faculty member and, let us say, the young classics faculty member. There is a real difference in their receptivity towards library automation and this aspect of library services, partly because the classicist, I guess, is grateful for anything he gets—

(Laughter)

—and the young physicist is still used to rather high living and he does not regard this as anything very unusual.

Beyond that, however, there was this discussion about the role of the U.S. economy, the U.S. libraries and all this, and I will ask Hank to address that.

MR. EDELMAN (Rutgers University): I mentioned to the group this morning a meeting in Europe that I attended about a year ago and a discussion among some of the large scientific publishers. There were three points of view represented. All of these points of view dealt with who controls the networks and with the assumption that whoever controls the distribution controls the literature. Interestingly enough, the role of the publisher was identified very clearly by the publishers as a distribution factor, not the gathering of scholarly information, publishing it, censoring, editing it; it is distribution that they are interested in.

The second speaker, who in this case was a leading American journal supplier, very clearly said that their trade really ought to control and did control, the information flow, and therefore the future was with them and their investment was good.

The third speaker was myself and I made it very clear that I thought the librarians controlled the supply because, after all, we are the ones who deliver most directly to the consumers.

Anyway, it is very clear that we did not resolve it, except that I believe it is fair to say that the publishers, being at the front and the ones who are in the lead at this time, are taking the initiatives: they are running risks, they are putting up tremendous sums of money to try to change the document delivery network. The ADONIS Project, modest as it may be, is a very clear effort of the large commercial firms to take the responsibility. I urge that since we are still in control of a segment at least of the distribution pattern, we get our act together and make sure that we tie in with that effort, that at a very early stage we come up with a common policy from the research library field, and not try to find a total national American policy, because that obviously will not work.

The time is still there, although I think it is good to remind everyone that the time of the American research libraries as the largest part of the market for these publishers is long gone. We are now, on the balance sheet of the largest publishers, maybe about 30-35 percent of their business; the rest is abroad and in industrial libraries. We are no longer in the position to simply say, "Here we are, the research library world, you cannot do it without us." They can very well do it without us, and we may find ourselves without any power at all. The rest of the world, Japanese—the whole Far East for that matter, the Near East, Africa, all those

libraries are buying and they are valid customers; they are paying the same journal prices as we are, and they are playing a role in this market now. And so the publishing world will not be as interested in us as they once were.

I urge that ARL take a leadership position in these discussions and go beyond just the process of problem identification. The time is now. Richard Talbot also mentioned it from their group and I would urge that we take the initiative. We have networks in place; we have capabilities and we have the interest, and I believe we actually have the money to do it. If we do not take action, I would place my bets that the publishing world will own the networks of the distribution pattern and will not sit there crying about the fate of the research libraries.

MS. MARTIN (Johns Hopkins University): I would like to second what Hank said. He said it much more elegantly than I would. But I have had the feeling today that we are sometimes talking in terms that make us believe the changes we are facing are ten or 20 years away. At other times, we are talking as though we at least accept intellectually that some of these changes are here, that technological innovations occurred a few years ago and are making their way into the university and into the library. I believe the latter is something that should be really stressed and I would second a call for some kind of action. If there are any activities in the working groups that were identified that could move us forward into dealing with the stickier issues now rather than when it is too late, I would urge us to do so. I am sorry--I do not have a plan.

MR. GOVAN: Maybe I am the densest one here, but I am not quite clear about what you think the Association could do.

MR. EDELMAN: This morning Bill Welsh reminded us that a National Periodicals Center (NPC) seemed far away in this matter, but nevertheless the concept is alive and well and the plans are nicely drawn up. We do have a plan in place. The Center for Research Libraries has the capabilities and it could very well be that ARL, in taking on the leadership position, will begin to speak for the research library community on this issue and then pick up where we left off. NPC was drowned in a democratic effort to try to involve all layers of society. I suggest that we do not do that, that we be very selfish. I would say, among the hundred here, we represent enough of the market share to go ahead and do something.

I am convinced, however, that, if this group does not do it, another group will have to do it and the chances are that it will be a group outside the library community. To be specific, I believe a resurrection of the NPC debate within this Association, and taking a stand on what that ought to be, is perfectly possible. I do not think there is actually all that much disagreement among this membership. We had a stand once. We can go back to the documentation and recall our stand on which we all agreed and go ahead and pursue it actively. I do not see it is all that difficult. We have the money in our own budgets, for that matter, if this is an important issue. That would be my second point, that for us to think that the money ought to come from a third side, be it from the government, or be it from a foundation, in this case would be a serious mistake because, once again, nothing is happening that way.

MS. BATTIN: Let me just expand a little bit on what I said earlier in terms of something else that ARL could do. I believe that these issues that we are talking

about—the cost, the implications, and the complexity—are such that they are not issues that can be solved by the research library community. It is an institutional problem and we need to draw our institutional officers into this. It seems to me that one of our problems is the place of the librarian in the university community. We are faced with a set of challenges that cannot be solved within the traditional structure of the university. A possible ARL contribution might be an articulation of the issues, all the things that we have been discussing, and their complexity. Then, as other professional organizations do, we should push for a recognition of the library profession and the kind of policy-making responsibility that library directors just have in the local institution in order to begin to resolve some of these problems.

I see the need for a principal university officer in charge of scholarly information on campuses—we do not have such an officer now—and I believe that person should come from the library profession. It could come from the computing profession, it could come from the teaching profession, but it seems to me that this is our role. But we have a good deal of work to do before that concept is accepted, and the ARL could contribute substantially in laying out issues and in beginning to push for that kind of understanding.

MR. TALBOT: I agree with Pat Battin but I also agree with Hank Edelman, and I do not think there is anything which prevents us from proceeding along both these tracks at once. It is imperative that we seize the initiative and do something, that we act on something finally instead of continuing to discuss these issues internally without doing anything.

MR. ATKINSON (University of Illinois): I have always opposed the proliferation of journals mostly because they cost too much. We have always bought them. But it seems to me that the specter of a controlled journal world is worse. Maybe we should encourage the publication of some rivals. In fact, it seems to me, that with the rise of the mini and personal computers, the ability of those same people who used to publish sort of lower desk drawer journals—you know, the Journal of Dreiser Studies and all of those publications that just pour out of the various departments—can be encouraged electronically as well as on paper.

In fact, it should be possible. We have always assumed that all electronic journal publishing is expensive. I am not so sure that it is. The production of 12 IBM mini discs per quarter should be inexpensive enough if the labor, the scholarly labor, is donated and we can provide some way to display them. I would suggest that the best counter to control by Wiley is in fact the encouragement of all of our friends who have a terrible urge to publish more journals.

MR. WEDGEWORTH (American Library Association): Just a brief comment. There have been a number of references to the size of the community that we represent, and I recall that one of the conservative estimates for the whole information industry itself is about $10 billion—small compared to the auto industry but still quite significant. The library community represents a sizeable percentage of that. We estimated at the end of the '70s that the public and academic libraries alone were spending about $2 billion a year on materials, and I think it makes a lot of sense for the group to exert much more initiative than it has in the recent past. I would also say as a publisher, that anybody who controls 35% of my circulation gets a lot of attention.

MR. McDONALD (University of Connecticut): I would like to go back to Hank Edelman's suggestion that our budgets are adequate to support a national periodical center or some such instrumentality and also his corollary assumption that there is no money to be found in the federal government or in foundations for this effort. I wonder how we might verify this? We have had shows of hands in the past, Mr. Chairman, and maybe you could call for one on the first point.

I do agree that the tendency in the federal government at the moment is very inimical to this kind of an effort. I alluded to Basil Stuart-Stubbs' paper earlier. He sees a similar trend in Canada, which is known as privatization; you can understand what that means without my telling you. But I wonder how many of you would care to raise your hands and say that you have a significant portion of your budget to devote to the establishment of an NPC.

VOICES: What is significant?

MR. McDONALD: You tell me.

(Laughter)

MR. GOVAN: Anything from a dollar up.

(Laughter)

MR. McDONALD: Well, maybe Don Simpson would tell us what it would cost.

MR. SIMPSON (Center for Research Libraries): A lot of money.

(Laughter)

MR. McDONALD: Divided by 100, how much?

MR. SIMPSON: Some of you on the other side of the room may not have heard when I said "a lot of money" in answer to John's question. One of the things that is clear is that as every day passes that amount goes up. Setting myself aside from my Board for a moment so that I do not embarrass any of them, I believe the time is ripe. Now is the time to move ahead.

Richard Talbot and I have discussed at some length some of the models that he has alluded to today in his small group discussion. It seems as if there would be money from the budgets of the institutions if the promise were more than just a promise and if the fruit from that labor would actually result in some longer-term return. There is not money for speculation but there is money for steady development.

I do oppose what Hank Edelman said about there being no money from the foundations. The federal government is pretty questionable at the moment but the foundations, I believe, are interested in what they call some serious global issues facing the research institutions of North America. As a result, they are interested in putting up some speculative money, if we, as a community, are prepared to carry it forward into operation and keep it operating once it is there.

I do not know what the price tag is. The president of an extremely well known foundation, which will remain nameless to protect the innocent, asked me for a figure, as the foundations are wont to do, and I said, well, the book that Lee Jones wrote for the Council on Library Resources said about $11 million and that $11 million had about $6.5 million for facilities. The research library community, of course, has already contributed the facilities for a national periodical center. Many of you are now paying or have already paid your special assessments to the CRL for its new building. Those of you who have seen that building know that the second floor is mostly open stacks waiting for journals. What we are trying to do at the moment is to decide which journals. We also must come to some conclusion on how to bring in those journals. The technological developments seem pretty clear to me. We do not know which printer, we do not know which terminal, we do not even have the protocol standards for linking some of the systems together that would be necessary, but those will come. But the major question is: What journals? What journals are going to most benefit the local institutions by providing the greatest amount of cost avoidance or cost savings for your institutions?

CRL is now wrapping up the third year of a very difficult but impressively informative planning process. From this is to come a plan that will say what journals. Those of you who participated or had your staff participate in our regional meetings and are going through this planning process with us are aware of some of the things that are being discussed. The price tag will come a little bit clearer at the end of that planning process, so I cannot really hand out a sheet and say, "Sign up for a blank check or a certain amount of money at this point in time," any more than I can specify on what date the electronic document delivery system will be available. Well, on March 24, 1987—that is as good a date as any. Certain elements of it, of course, will come along as these things unfold.

What I hear library directors saying is that if there is a possibility of a system that is more than speculative, they are willing to support it. That is the premise under which we are moving ahead. As for being more specific than that about what the actual price tag would be for an institution, the only thing I can say at the moment is that it cannot be much more than institutions are presently paying CRL, and that means the foundations must pick up the difference. If we do it as a group, we have much more clout than just Don Simpson standing on a street corner.

MR. WELSH: The NPC did not fail for economic reasons. It failed because of the inability of ARL to prioritize and determine that in fact it wanted an NPC. It failed because of a lack of commitment. When RLG ran into financial difficulty, to take Pat's suggestion, the university presidents got behind it and put up the bucks. I believe, as Don said, you can tailor this at the beginning to whatever is necessary to demonstrate that it is a feasible and viable operation. The number of journals selected can be quite arbitrary. The selection of those titles can certainly be arbitrary. All that is needed is a pilot project to demonstrate that it is feasible and a commitment on the part of ARL that it is one of this Associations's priorities.

MR. TALBOT: I want to follow up on a point that Don made. The operating budget of CRL is about $2.5 million. It is about $25,000 apiece for this institution. If we accept Lee Jones's estimate of $5 million as the operating number, that would be $50,000 apiece for 100 ARL libraries. But that number could be reduced by sales to other units other organizations. Explicit in Lee Jones's plan was the idea that there would be sales to other libraries that would or could reduce the burden on the

principal members. When we think about the fact that the median ARL library has been losing $100,000 a year to inflation, I believe we might be able to find some money that might offset some of these things.

MR. SIMPSON: One of the other difficulties in this, which we have learned about in the regional meetings, is that the plan for an NPC, or whatever label you give it, assumes a new organization opening up in a cornfield someplace in Western Illinois or Iowa or wherever else you might open up such a thing, and that people believe that what CRL has been doing for the last three decades is extremely important to many institutions. We cannot abandon that, at least not totally or not immediately. How does one redirect a $2.5 million budget which is straining to keep pace with all of the commitments for all the institutions, for all these decades, and yet put the other in place? Of course, the answer that we are looking at is foundations for seed money to make the demonstration that Bill talks about. That in turn will make the case for you to convince those who fund you to grant support in a larger amount to carry this program forward or to entice other kinds of customers to help support it.

That is the rationale, but I also agree with Bill Welsh that the commitment of ARL is absolutely imperative to implementing such a plan. There are too many pitfalls all along the way without that kind of support. Also, some hard choices will have to be made if we cannot get enough outside money, because there are only so many ways one can slice the pie without increasing what is already a burdensome assessment to many institutions.

MR. GOVAN: Any other comments or questions? It strikes me we have got an agenda here that is worth at least a generation. If we really do any of this, when you think about the relationships to outside bodies and trying to impact national policy and developing internal capacities all at the same time, we have a pretty full menu. It seems to me it might be worthwhile to think a bit about whether we have the structure and the organization to undertake these things, as we are now constituted, and what we might do in order to get ourselves more in line with our aspirations.

My thanks to everyone who participated in this program.

BUSINESS MEETING, SESSION I

[Session I of the Business Meeting convened on October 13, 1982 at the Arlington Hyatt Hotel, Arlington, Virginia, with President Millicent D. Abell presiding. Ms. Abell opened the meeting by introducing new and acting directors.]

## Report of the ARL Executive Director

MS. ECHELMAN: This afternoon I will review some of the highlights of my written report very briefly and give you a chance to discuss some of the items with me, if you so chose. [The Report of the Executive Director appears as Appendix C to the Minutes.]

I would like to start by reviewing some of the federal agency and library programs funding issues. Jeff Field of the National Endowment for the Humanities Research Resources Program has kindly provided us with a written update of activities at the Endowment. [The NEH Research Resources Program report appears as Appendix D to these Minutes.] Jeff is with us this afternoon and would be happy to answer any questions that you might have.

I will turn now briefly to the Department of Education, which is represented at this meeting by Ray Fry of the Office of Libraries and Learning Technologies (OLLT). In my written report I have discussed some of the rumors that are flying around about what is happening at the Department of Education, just to give you more of a flavor of what we think we know rather than what we actually do know, because, frankly, we do not know very much. We do know that Title II-C has been funded in the continuing resolution at the 1982 level, which is $5,760,000. I remind you that the applications for II-C grants have been sent to you and the deadline date for applying is November 15. OLLT is preparing its 1982 abstracts but has not been funded to distribute them, so ARL will make them available to members when they are ready. The abstracts contain some additional analysis of the program to date, in which you may be interested.

The Department of Education has awarded a major contract, under Title II-B of the Higher Education Act, for the development of criteria for competency-based curricula in library and information science postgraduate education. King Research, Inc. is the contractor. Dr. José Griffiths will manage the project for King. She is a guest of ARL this afternoon and has been invited particularly because of the Library Education Task Force portion of this afternoon's program. This is Dr. Griffith's first opportunity since the contract was awarded to talk with employers of librarians about what competencies they expect in entry-level professional staff members. This is your chance to talk with her right at the outset of a major effort on this subject.

I will move briefly to a recent report on the National Agricultural Library, the results of which are summarized in my written report. This report was a review by a 12-member interagency panel appointed by the Secretary of Agriculture. ARL

directors in land grant institutions were sent copies in late August or early September. If you have not read it carefully yet, I suggest that you do so immediately upon returning to your offices. It contains a number of very important recommendations concerning the future of the National Agricultural Library as a central national resource in agriculture and the related disciplines. Apparently the report has been very well received by the Secretary of Agriculture. Among the members of the panel that prepared the report are Joseph Caponio of the National Technical Information Service, Martin Cummings of the National Library of Medicine, Joseph Howard of the Library of Congress, Toni Bearman of the National Commission on Libraries and Information Science, and Robert Warner of the National Archives. Libraries in universities where agricultural research is being done owe these busy federal executives and their nine colleagues a debt of gratitude for a detailed, careful, and thought-provoking report. I am sure that any or all of the people who participated in constructing it will be happy to talk with you about the report, about its implications for ARL, and about your concerns for agricultural research materials in the United States.

On to the tax reform issue. The Artist's Tax Equity and Donations bill was reported out of the Senate Finance Committee on October 1. It is our hope, though it is not certain, that further action on this bill will take place during the lameduck session of the Congress in November and December of this year. Thanks are due to ARL directors who responded to our memos and telephone calls during the past few months to contact key members of Congress about this legislation, especially senators on the Finance Committee during the last two or three weeks. I would like especially to mention the unremitting support for and effort on behalf of this legislation by the Librarian of Congress, Daniel Boorstin. But the day has not yet been won. Now that Congress is in recess and legislators are in their home districts, do not lose the opportunity to call on your representative. It is election time all over the country and we have to make the most of it.

There is little to add to my written report on the issue of copyright and the five-year review of copyright law. There have also been Newsletter items on this issue. I would like to note that David Ladd, the Register of Copyrights, and several of his senior staff members will be with us for tomorrow's discussions of document delivery. In a recent statement Robert Wedgeworth has recast the copyright debate in terms of rights of access versus rights of ownership. ARL, ALA, and our sister associations continue to be involved in discussions among ourselves, with the publishing community, and with the Copyright Office. Unfortunately, I am not, at present, sanguine about the outcome of these discussions. We must be prepared for proposals to change the law in ways which may not be of benefit to libraries and their users, and the proposed 1983 ARL budget which you received in the mail reflects my concern in this area.

A brief note about the Office of Personnel Management (OPM) and the standards for federal librarians which are being worked on there. The edition of the ALA Washington Newsletter which is now in the mail to you contains a full report on the status of these standards. However, Bill Welsh told me last Thursday, if I heard him right, that OPM has definitely decided to downgrade the entry level for professional librarians in federal service from GS-9 to GS-7. This is a particularly disheartening decision in view of our own concern for upgrading training and education and for recruiting better people to the field. I do not have any further information on this issue. The process by which the review is being undertaken is, as

someone put it very succinctly, bizarre, and we do not know yet what the complete outcome will be.

To turn to some internal matters, ARL's Office of Management Studies is embarking upon an important new initiative in the area of public services management. This initiative is being undertaken with the generous support of the General Electric Foundation. Duane Webster will be telling you more about it in his report later this afternoon. I would like to take this opportunity to welcome to our meeting Walter Grattidge of the General Electric Corporation and to ask him to convey on all our behalfs gratitude and thanks to the Foundation's Board of Directors for their support.

The Center for Chinese Research Materials has a new Acting Director, as you saw in a recent ARL Newsletter. His name is Pingfeng Chi and he has also come to the meeting this afternoon. He has been a member of the ARL staff this time around—he was on the staff before—since last February and was named Acting Director upon the retirement of P. K. Yu last July.

Pursuant to Board action last May, a proposal to extend the ARL Microform Project to coordinate preservation microfilming activities was presented to the National Endowment for the Humanities. We have recently learned that the Endowment has funded that proposal at $63,000. I would like to take this opportunity to thank the Endowment for the grant. There is a report on what that project will be doing on the table at the back of the room. [The report on the ARL Mircoform Project appears as Appendix F to these Minutes.]

Other ARL programs and activities are noted in my report and recent issues of the Newsletter. If you have any questions or comments about any of these or about any other part of my report, I would be happy to entertain them now.

MS. ABELL: Are there any questions for Shirley with regard to her report or other related issues? If not, then I would like to call on Duane Webster to give the report on OMS.

## Report of the Office of Management Studies

MR. WEBSTER: Thank you, Penny. I would like to review quickly the public services grant that Shirley mentioned to you. First, however, I would like to alert you to several OMS handouts that are on the back table. There are press releases there covering the schedule for the Management Skills Institutes that we are planning for this next year, the current group of librarians selected as part of the Consultant Training Program, and describing the public services grant. Beyond that, there is a more comprehensive report on OMS activities that we prepared for the ARL Board.

The purpose of our new effort, funded by the General Electric Foundation grant, is to develop resources and methods to help you examine, analyze, and strengthen the public services program in your libraries. The project builds on our earlier experience with self-studies in the areas of management, collections, and

preservation. But it goes beyond simply design, development, testing, and making available a self-study process. We are adding here a component for preparing training materials for public service librarians. And there is also going to be a component called "sponsored research" that is intended to help a few libraries who have an interest in a specific issue to get support for investigating that issue. We hope they will come up with insights on those issues that will be of benefit to the entire membership. This effort to encourage institutional research is a departure for the Office and, I believe, a particularly important feature of the General Electric grant.

To help us put this program together, we have been fortunate to attract Patricia Swanson, who is the Head of Reference Services at the University of Chicago. Pat is taking a year's leave of absence from Chicago. She will contribute practical hands-on experience to complement the training, consulting, and design experience that is present in the Office. As with the preservation project, we find it is very helpful to have this type of working relationship with people in the field, not only having someone who can be a direct part of the design team, but also working with an extensive number of member libraries in the actual conduct of studies.

In addition to Pat's help and, of course, the array of OMS staff who will be involved in the project, we have been fortunate to have a group of ARL directors agree to work with us as an advisory committee, not only assisting us in the design and refinement of the self-study process, but also working with us in deciding which libraries will get the grants to participate in the program as pilot studies and which libraries will be participating in the program as part of the sponsored research. The members of that committee include: Jay Lucker, who is chair, Susan Martin, Harold Billings, Robin Downes, Robert Miller, Merrily Taylor, and Paul Vassallo. The committee had its first meeting this afternoon. The discussions centered around criteria for making the decisions on institutional participation. Subsequently, we met with about 30 of you to talk about how the self-study and sponsored research programs will be operated as part of this project.

There are several key elements in this effort. First, there is a significant commitment on the part of a corporate foundation to help research libraries address a pressing concern. And I congratulate and thank the General Electric Foundation for that support. Second, and very important, I believe this will lead to considerable discussion and attention being focused on the public service component of our libraries. That focus is well deserved and is timely in view of some of the technological changes, economic pressures, and user interest in our collections. And, third, I see this as an additional opportunity for direct member involvement, as well as support for those institutions that are eager and able to introduce change with the help of this program.

## Election of New Board Members

MS. ABELL: The next item on the agenda is that of the election of three new Board Members. The Nominating Committee has nominated the following: Hugh Atkinson, University of Illinois; Patricia Battin, Columbia University; and Paul Vassallo, University of New Mexico. The floor is now open for additional

nominations. Seeing no hands and hearing no additional nominations, may I hear a motion?

A DIRECTOR: I move the nominations be closed.

A DIRECTOR: Second.

MS. ABELL: All those in favor please signify by saying "aye." (Chorus of ayes.) Those opposed, "nay." (No response.) Done. Congratulations, three new Board Members.

## Report from the Council on Library Resources

MS. ABELL: Next on the agenda is a report on the activities of the Council on Library Resources from Jim Haas.

MR. HAAS: I have a limited 45-minute or so talk here; I am looking for a compromise on what was assigned me. Actually, I have a mix of things: some general information that might be of interest to you, and then, second, a bit of speculation.

First, we have moved. We are no longer in that hotbed of educational bureaucracy, Number One Dupont Circle. We are now at 1785 Massachusetts Avenue in the building owned and operated by the National Trust for Historic Preservation. I note this simply to hope that, as all of you are in town at one time or another, you will come by and pay us a visit, because the Council's new quarters are very nice.

Next, a word on the Council's Management Intern Program. As you know, last year we suspended it for a year while we assessed the program, because it is a nontrivial one in terms of costs. It has gone on for eight years and something approaching 40 librarians have spent a year away from home, some of whom have gone on to greater and better things afterwards. It was clear from both the past interns and their hosts that this was a venture we should persist in, and we have agreed to go ahead.

I was a bit nervous a week ago. The deadline for applications was actually yesterday, and a week ago we had nine, which gave me some concern. When I left late this morning, we had 67. So I think we are in good shape in terms of having a pool of candidates for the next group of interns. Over the next month or two we will solicit letters of recommendation from individuals the applicants themselves identify, and then a committee of the Council—we draw on many of you for help here—will review the applications and ultimately interview a number of the candidates who seem to be the most likely. We anticipate that there will be five more interns next year.

A number of libraries have already asked that they might serve as hosts. We have duly entered all those names and I would say to all of you here that if you are interested in hosting a management intern next year or in some future year—because I think we are going to continue with this for a while—let us know. The assignments

are made on the basis of the interests of the interns themselves, their own, sometimes personal, situation—how far away from home base they can easily be—and so on. But we try, maybe through intuition more than anything else, to match the intern with the host. If you would like to take part in some way, let me know. But in the meantime, thanks to a good many of you for your help in encouraging people to apply.

We also noted a few months ago that we were embarking on a new fellowship program, this one designed to support, at a modest level, research to be conducted by library school faculty members and librarians acting in concert, a joint research proposal. And in just a relatively short time we have received more than a dozen applications. We anticipate continuing this program for several years, so it is something to keep in mind. The idea is to help the library school faculty members get into closer touch with the real world of what goes on in research libraries today. Many of them are, but we believe many of them are not. This is an effort to bring faculty members and librarians together in joint ventures.

I note the first Frontier Conference that Bob Hayes ran at UCLA in December. He delivered to me last week the manuscript of the report, which is earmarked for publication. I would say parenthetically that we are carrying on discussions about the second Frontiers Conference. I think they have gone far enough so that I can say that it looks as if the University of British Columbia will host the second Frontiers Conference, with Basil Stuart-Stubbs taking the principal lead at that library school. The focus is probably going to be not only on the influence of new technology, but also on the ways of operating that that new technology implies for the curriculum of library schools. The details are not worked out yet, but it is in the works.

I am delivering a message for Bob Hayes. A number of you took part in the first Senior Fellows Program at UCLA in August and early September. The Council has funded years two and three of this program, at least in part. I believe Bob would agree that the first year had many merits and many strengths but, like all such enterprises, there are subtle changes anticipated the next time around. Bob asked me to underscore to everyone here that he hopes that each of you will individually and personally consider the prospect of taking part in that Senior Fellows Program next year at UCLA. It will be modified somewhat, but we anticipate that maybe a dozen or so directors of libraries—and the emphasis, I think, is going to be on directors and on very senior managers—will again take part. You might want to talk here with some of the people who took part this first time around.

I am about pressing my luck here a little bit, I know. Just a brief mention of the Wingspread Conference in December that the Council, along with the American Council of Learned Societies and the Association of American Universities, is sponsoring. This grows out of an effort last year to bring together the scholarly community, librarians, and the university officers who have got to pay for everything, so that they can collectively set an agenda. This is just one more example of an effort that I know ARL itself has been moving on, to try to expand the setting in which the libraries operate.

Let me now go from specifics to generalizations. The Council has just finished its 26th year. I was unable to be at your meeting in May, but had I been there, I would have simply noted that what we have been doing much of this last year is reflecting on the future. Our Board decided that rather than simply go on in future

years as we have gone in the past, we would take a look at the Council to see how it can be most effective and most useful, not only to the library community, but also to the university and scholarly world generally. We asked four people, two from our Board, Ruth Davis and Robert Vosper—many of you know them—to join with two others who had little real knowledge of the Council, namely Neal Rudenstein, the Provost of Princeton, and Robert O'Neill, President of the University of Wisconsin, to constitute themselves a committee to look at the future and report to our Board. They talked to a good many people, reported to the Board, and during the last year we have been trying to translate their report into--I would like to say new directions for the Council, but it is not all that dramatic a change. It is a set of refinements and some additions in program and some new constraints. The biggest difference is that in the past we have operated largely with unrestricted money, a series of Ford Foundation grants. Starting a few years ago, we became more diversified. Ford continues to provide support, but now a much larger number of foundations provide support. And so what we are trying to do is, first, to sharpen and redefine our program directions, and then, second, to assemble the money to enable us to continue much as we have in the past.

Our Board will meet on November 13. Soon after that time I anticipate that we will be publishing some kind of a small document that will give everyone who is interested a sense of some of the specific changes that the Council will be making, both in the way of operating and in the general range of program activities that we are able to continue to support. The biggest one by far still is the Bibliographic Services Development Program (BSDP). I will not get into that at all, because Lee Jones has provided you with a review of what goes on and is available for questions.

I think I will stop at that point. And if there are any questions, I will be happy to respond.

MS. ABELL: Are there any questions for Jim at this point? Lee, do you want to add anything to what is in the written report? [The report on CLR Bibliographic Services Development Program appears as Appendix E to the Minutes.]

MR. JONES (Council on Library Resources): I do not have anything to add, but I am perfectly willing to respond to questions. The opportunity to review my written report has been relatively limited. Maybe I should remark that our three principal program thrusts continue. Our interest in linking the bibliographic utilities continues apace. A two-pronged set of projects, one related to telecommunication protocols, and the other, the implementation portion focused on name authorities, continues to make progress. We expect that the Name Authority File Service, now to be operated by the Library of Congress, will come up in late 1983, or early 1984, depending upon progress in the other two areas.

As you all know, we have been collecting data on online public access catalogs for some time, and the final reports of these studies will be available in the next month or two. Two meetings are growing out of these efforts. One is a discussion between a small set of library directors and a small set of system designers to talk about the results of online public access catalogs and of another study we have funded to look at the cost factors that relate to various features of online public access catalogs. The second meeting that we are in the throes of organizing is a session to bring together those people responsible for training library users to use online catalogs, to look at the results of the study and see what the implications are

for training.

Finally, the last substantial portion of BSDP is focused on subject access. I reported last time our intent to hold a meeting of experts. That meeting was held in Dublin, Ohio, in June, and resulted in a set of long and short-term recommendations for action. One of those recommendations has been undertaken already: the enhancement of the Library of Congress Subject Heading List with cross-references contributed by institutions around the country. There are four institutions participating in that test. There are other activities, as well, about to get under way in the area of subject access.

I would be happy to answer any questions.

## Report from the ARL Committee on Interlibrary Loan

MS. ABELL: Thank you, Lee. Next a report from the Interlibrary Loan Committee by Ken Peterson.

MR. PETERSON: I would like to say a personal word before reporting on the Interlibrary Loan Committee. Ralph McCoy came by my office yesterday and said, "Be sure to give my regards to all my friends at the ARL." Ralph misses his contacts with the Association here, but he is keeping busy. He and Robert Downes are working on a book on First Amendment freedoms which they hope to have published within the next year. Second, I am filling in for Sterling Albrecht, who is not able to be here. Sterling is the chair of the ILL Committee and we are sorry that he is not able to make this report. Third, I want to express appreciation to Maxine Sitts and members of the ARL staff for the substantial work that they did on the Interlibrary Loan Survey. We are very much indebted to them for pulling together a very rough questionnaire which the committee worked on last May in Arizona, and for a really marvelous job of synthesizing the results of the survey.

Let me give you just a half dozen or so of the highlights from the survey and then review for you some of the conclusions that the committee came to about the survey when we met earlier this afternoon.

First of all, we were very grateful that 110 out of the 113 libraries of the Association responded. We found that 36 ARL libraries are currently charging for interlibrary loans, that is, for the borrowing and lending transactions, not for the photocopying or for the production of microform copies. This represents about 33 percent of the member institutions at the present time that have established fee bases. Of these 36 institutions, 18 have special fee arrangements for other ARL libraries and, of these 36, 14 make their charges only to libraries that levy charges against them.

Almost all of the institutions are charging for photocopies: 105 out of the 110 reported that they are charging for photocopies. Only 70 libraries reported that they are charging for copying microform material on interlibrary loan requests.

About 25 percent of ARL libraries indicated that they expect to institute

charges or to raise their current charges within the next two years. Half of the ARL libraries reported, however, that they will not raise their charges or institute charges during that period.

In response to the question about whether ARL libraries would be willing to suspend charges for other ARL libraries, 80 percent of the reporting institutions indicated that they would be willing to; however, 20 percent indicated that they would not. The committee is particularly cognizant of the fact that it is the large institutions which are undoubtedly the greatest lenders among the institution members who report that they cannot suspend their charges for interlibrary loan transactions.

We were very much interested to find that ARL libraries reported a total of 429 special interlibrary loan agreements—this averages out to just a little less than four per institution. We also found that over one-half of ARL libraries are receiving subsidies for interlibrary loans. Of the institutions receiving subsidies, about three-quarters are receiving them from state agencies.

In the area of preferences in terms of sending requests, in-state and in-region categories ranked highest in terms of the requests for lending. Third in that category were requests to the Center for Research Libraries. In terms of factors that influence the patterns for borrowing, 42 libraries indicated that speed of delivery was the primary concern or the consideration, and 39 of the libraries reported that they were influenced secondly by charges, whether an institution from which they were borrowing charged for the materials.

We will be recommending that a fuller description of the results of the survey be published in the Newsletter. Eventually, when we have had time to make more thorough analyses of the statistical data, we recommend that a SPEC Kit be provided not only with the results of the survey itself, but also with samples we received from various institutions of the materials that they are using in connection with interlibrary loan activities.

In discussing the factual results of the survey the committee came to six conclusions. These are by no means final; in some ways they lead us to believe that we need further study of the dimensions of interlibrary loan activity.

First, the high rate of returns, 110 out of 113, indicates to us that there is not only serious interest in, but also serious concern about, interlibrary loan activities in libraries. From that the committee has inferred that there is undoubtedly greater interest in and need for resource sharing, probably based upon declining ability of local collections to meet their users' needs. If that is accurate, we think it is a very serious trend that the Association will want to consider in terms of future planning.

Second, the committee felt that there was a dual concern being expressed in the results of the survey. While, on the one hand, there was obviously greater need for resource sharing, on the other hand this was offset by a greater interest in and a need for recovering expenses. We could see these two trends working counter to each other unless we find some ways to deal with the expenses of interlibrary borrowing and also with the need for greater resource sharing.

Third, we found in the replies, particularly in the statements that were given

with the survey returns, that there was a sufficient divergence of interlibrary loan policies and procedures among the ARL institutions so that it appears to us at this point that we will not be able to recommend uniform policies or procedures, which, in all probability, would not be feasible on an Association-wide basis. We probably need to do more thinking about that, but that is the feeling we have at this point.

Fourth, because there is a trend among ARL libraries to increase charging for interlibrary borrowing and because there appears to be an increased acceptance on the part of ARL institutions to pay for borrowing, the Committee recommends that ARL consider the value of establishing a credit mechanism for some sort of balancing or exchanging of charges at the end of the year. We believe that this would be a service to the institutions and would probably cut down to an appreciable degree the amount of recordkeeping and mailing of invoices and so on among individual institutions.

Fifth, the committee noted that while the trend toward charging is increasing, support from subsidies has declined steadily since 1976, the time of the previous survey. Therefore, the committee is seriously wondering whether there is a need to find out more about subsidies as a means of recovering interlibrary expenses. There are two special problem areas. First, the private institutions in many cases are not receiving the benefits of state subsidies at the present time. Second, many of the subsidies that are being received, particularly by the state institutions, are restricted to borrowing and lending arrangements within their own states, and do not cover interlibrary loan activities that cross state lines.

The Committee has drawn up five or six recommendations which we plan to submit to the Board of Directors at its meeting tomorrow and we will be having further information for you in due course as we are able to make further analyses of the data.

MS. ABELL: Thank you, Ken. Before you leave the microphone, let's see if there are any questions or any ad hoc advice that anyone in the audience would wish to give the group. Yes.

MR. ROUSE (Oklahoma State University): I think most of the state funds that are going to interlibrary lending might be LSCA funds, federal monies, which would have no restrictions. Am I right on that?

MR. PETERSON: I do not know whether you are right on that. I am not sure that most of the funds are LSCA. I think that there are a number of states that are funding this by other appropriations within their states. I know that in Illinois, for instance, we are operating with a state appropriation rather than LSCA funds.

MS. ABELL: Are there other questions or comments? Thank you very much, Ken.

## Admission of New ARL Member

MS. ABELL: We have an additional action item on today's agenda, a

recommendation for membership. You will recall that the Guidelines for Nonuniversity Library Membership in ARL were adopted in May. The committee which prepared those guidelines has recommended to the Board that the Canada Institute for Scientific and Technical Information (CISTI), be invited to join ARL. The Board, in turn, recommends that action to you. As a resolution of the Board, it is now on the floor for your vote. Is there any discussion of the proposal to invite CISTI to join ARL? Are there any questions you might have for the Committee? Yes.

A DIRECTOR: Penny, could you tell us a little about CISTI?

MS. ABELL: Sure. Roy, could you tell us a little about CISTI? Roy Kidman is the chair of the committee which made the recommendation to the Board.

MR. KIDMAN (University of Southern California): As you all realize, we cannot have the kind of statistical criteria for nonuniversity libraries that we can have for university libraries. But what the committee tried to do was to set up criteria that we thought would correspond to the most important characteristics of university libraries so that any members who were invited and joined the Association would want to participate in the same program. Essentially what we concentrated on, as you might expect, were things, such as collection size, acquisitions level, serials, staff size and the educational level of some percentage of the staff, and access by scholars and some demonstration that the collections were actually available.

I will just give you a quick rundown on CISTI. Incidentally, CISTI used to be called the National Science Library of Canada; it is responsible for science, technology and medicine for the entire country. To give you an idea, the collection size is over 2 million volumes; serials are almost 26,000 titles; they cataloged almost 30,000 items last year; and they have 193 FTE employees, 25 percent of whom have advanced degrees. The interlibrary loan total was 212,000 items last year.

I would be glad to answer any other questions you may have.

MS. ABELL: I sense a kind of swell of support. Is there any other discussion?

MR. GOVAN (University of North Carolina): I will call the question.

MS. ABELL: All right. Thank you, Jim. All those in favor of inviting CISTI to join ARL please signify by saying "aye." Those opposed, "nay." It is unanimous.

## Report of the ARL President

Before we get to the special report from the Library Education Task Force, I want to report to you on several items.

I regret to announce that Donald Koepp of Princeton University has submitted his resignation as a member of the ARL Board of Directors because of the press of other business. The Nominating Committee met last night and proposed John McDonald of the University of Connecticut for a one-year term to complete Mr.

Koepp's term. Additional nominations will be solicited from the floor and the election will be held during Business Session II.

I am pleased to announce that the Board has elected a new Vice President/President-Elect, Eldred Smith of the University of Minnesota. Eldred, would you stand up?

Finally, I wish to report very briefly on the progress of planning for the Association. The Board has decided that a small task force should be convened to prepare a plan for the Association identifying specific priorities, short and mid-term objectives, activities to achieve those objectives, and related costs. Background material for the plan will be drawn from the various papers and discussions of the past couple of years. Of immediate value will be the planning outline solicited from ARL committees and task forces—thank you very much for your thoughtful work—and the advice from the members at the Business Session II tomorrow. It is our aspiration—though not our commitment—to bring a plan to the Membership at the spring meeting for action.

That concludes my report. We will now proceed to the Library Education Task Force Report.

## SPECIAL REPORT FROM THE ARL TASK FORCE ON LIBRARY EDUCATION

### Introduction

MS. ABELL: I will now turn the program over to Margot McBurney, chair of the ARL Task Force on Library Education.

MS. McBURNEY (Queen's University): Thanks very much, Penny. The purpose of this Special Report of the Task Force on Library Education is threefold: to report on recent task force activities and plans; to hear about what it is really like in today's library school and in research libraries; and to hear your views, questions, and comments.

I would like to begin with a brief report on some task force activities and accomplishments, and what we plan for the future. We have identified several issues to be addressed, and our recommendations for further action have already been sent to the ARL Board and have been approved. These include the following:

- To recruit talented students to research librarianship.
- To improve the quality of educational preparation for future research librarians.
- To foster intellectual exchange between library school faculty and library staff.
- To reach university administrators about the importance of both the library and the library school to the scholarly goals of the university.
- To seek effective ways to educate and develop librarians at mid-career.
- To involve the American Association of Library Schools (AALS) in the work of the ARL Task Force.

Several activities designed to carry out these recommendations are already under way. A draft of a recruitment brochure will go to the ARL Board for approval in February. The target audience of the brochure will be undergraduates at selected strong liberal arts colleges and universities, students with scientific as well as social science and humanities background. As you know, earlier this year a letter was sent to deans of library schools to identify a few ARL library directors willing to act as an informal speakers bureau. Speakers would alert library school students to the challenging careers in research libraries, in an attempt to counter the perceived problem that we are losing the best students to the information brokers and to the special libraries.

A curriculum draft paper is being prepared for use in further discussions with ARL directors. Further, a draft paper on internships is being developed but is not yet complete. As chair of the Task Force on Library Education, I have been attending an AALS Task Force meeting which is drafting a procedural internship

document. It is slightly different than the one we are working on.

In the area of fostering intellectual exchange between library school faculty and library staff, last July a letter was sent to library directors and library school deans with some suggestions for collaboration on projects and research between the two groups. Earlier today Jim Haas mentioned what the Council on Library Resources (CLR) is doing in this regard in funding joint research by the two groups.

Two library school deans have been appointed to the task force; they are Edward Holley from the University of North Carolina and Herbert White from Indiana University. Finally, the task force has recently asked for either an extension of its two-year mandate, which expires this December, or for standing committee status, because we believe that we must complete the work that we have begun.

Now for today's program. Russell Bidlack, Dean of the Library School at the University of Michigan, will "tell it like it is" in library schools. Then Patricia Battin, the University Librarian at Columbia University, will do the same for research libraries. Since their papers were sent to you, they will not read the papers and will speak only briefly to them. General discussion will follow both speakers. [Note: The papers by Mr. Bidlack and Ms. Battin appear in these Minutes as Appendix B.]

## Remarks by Russell Bidlack

MR. BIDLACK (University of Michigan School of Library Science): Last week I got a letter from the President of Scarecrow Press. His first sentence was to congratulate me upon my long tenure as Dean at Michigan. Then he wanted to know if it were true that the school was being reviewed for possible elimination. I responded that if so, I had not heard about it. It happened that I had a meeting coming up with my boss, the Vice President for Academic Affairs, and he confirmed the fact that we were not on any hit list. But rumors are rampant.

I will not name the school, because I do not want to be a part of spreading the rumor, but a rather prominent library school's dean, who has a sense of humor, said jokingly a few months ago as he left for a budget meeting with his vice president, "Well, I have to go and find out whether we still have a library school." That intended joke was picked up by people who overheard it and the rumors spread far and wide that that particular library school was in trouble. It was not put to rest until he was confronted with it at the Philadelphia meeting. This illustrates the insecurity of a number of library schools. Perhaps in the paper that I have prepared I add fuel to that kind of rumor, and for that I am sorry.

There are presently 62 library schools in the United States that are on the ALA accredited list. These include two that I mentioned in the paper with very uncertain futures, the State University of New York, Geneseo, which definitely, I beleive, will be closed, and the University of Minnesota that presumably will be—at least, they have not been permitted to admit new students at Minnesota. (Besides these 62, there are seven more in Canada; I have not attempted to address my remarks to the Canadian situation.) As I indicated in the paper, I am convinced that this number

will decrease in the next few years, probably considerably.

I pointed out that the FTE enrollment for the fall 1981—I do not have fall 1982 figures—in the 62 U.S. schools totaled something less than five thousand: 4,970 FTE. If you divide that by 62, you get about 80 FTE per library school. I would ask you to imagine a law school or a school of education or a school of social work in a major university with an enrollment of 80 FTE. Were the number of library schools reduced by half, which happens to be the number that did exist on the accredited list exactly 20 years ago in 1962, and if the enrollment were evenly divided up, that would make 160 students FTE per library school. Even then, that would be mighty small compared to virtually every other school, or college, on a given campus. As I noted in my paper, I am not at all hopeful that in this reduction in number the best schools will survive in every case and the poorest schools will be eliminated. These decisions about our future, I think, will be made on individual campuses. There will be no master plan followed in this.

In the paper I also commented upon the cost of library education today in relationship to the salaries of librarians, and I am sure that you directors get awfully tired of library school people complaining about this. But I used as an illustration my own situation—and confessed how old I really am by noting that I got my master's in library science in 1948. A classmate of mine was Jim Skipper [currently Executive Director of MIDLNET]. We had both gone to Michigan as out-of-state students and we were both on the GI Bill, but had we paid our own tuition, it would have come to $650 for those four semesters that we spent, first earning the bachelor's in library science and then the master's in library science. Today for the AMLS degree at Michigan, for which we now require three trimesters, the out-of-state student pays $9,390; the in-state student pays about half that.

I use Jim Skipper as an example because in 1948, whereas I stayed on for my doctorate, he decided he had better see what the real world was like and got his first library position. He became the Associate Director of Washington-Jefferson College Library and went for $3600, which was not a bad salary at that time. I had been a First Sergeant in the Army, believe it or not, not long before that, and I had received $3600 which I thought it was a splendid salary. And he, I think, received the highest salary of anyone going out in 1948. Had library salaries kept up with tuition costs, at least at the University of Michigan, I noted that Jim Skipper going out this year would have to get a beginning salary of $52,000 to match it, because tuition has gone up that tremendously.

Now, I must confess that this has not happened at every library school. Ed Holley is in our midst and I gave him a plug in the paper by noting that tuition at North Carolina, for example, is much less than at the University of Michigan. It is true that the University of Michigan's tuition for out-of-state students, is right up there with the private universities—Columbia, Chicago, Denver, Case Western Reserve. And thank goodness that we do not charge everybody what we charge out-of-state students.

I believe this partially answers the question of why sometimes you feel you do not get the brightest and the best. We often are not able to attract all the people that we would like to library schools in part because of the cost of that education and in part because of what we can promise thereafter. I listened to the pitch that our dean of the School of Engineering made recently to a group of students. The

main point was that he could guarantee anyone admitted to his program a beginning salary of at least $25,000 immediately upon graduation with a bachelor's degree.

This is one of the hard facts that we have to live with, and I know that a little later Pat is going to challenge me to help provide some answers. But at this point I simply present it as a question.

## Remarks by Patricia Battin

MS. BATTIN (Columbia University): Rather than discussing my paper, which you can all read I would like to talk about something else today that I believe is another major issue in this area. As I said to Russ this morning, I found his paper inordinately depressing, and I am trying to think of some ways that we library directors can make some positive contributions.

One of the things that struck me in thinking about this is that our profession now shares with some others, particularly engineering, a professional plight because we are directly affected by a rapidly changing technological environment. In a recent issue of the Chronicle of Higher Education, there was an article about some of the things that the engineering profession is doing to combat the same sorts of problems. I have to confess that in the present chaos of my life in trying to maintain bicoastal living, I threw the article out before I had completely finished it. But some of you may have read it. There was a particular item in their program that interested me, and I would like to apply it to the library situation. It is a major problem of how the academy can keep up with the changes that are happening in the field, in order to educate our future professionals, to provide continuing education for those of us who are out there now coping with unanticipated challenges, and to restructure educational programs to cope with the declining budgets and enrollments and other problems that are outlined in Russ's paper.

As library directors we may have been looking at this thing through the wrong end of the telescope. In talking to the educators our focus has been, "Why don't you do something about this?" rather than recognizing that there is a significant service that we can provide in this new environment. That service is to tutor our teachers in the reality of the technological world and the major issues arising from that world which demand significant and substantial intellectual effort and research.

Our traditional model assumes availability of the written record. Today too much is happening too fast and nobody is documenting it. Librarians are learning on the job and no one is telling the faculty what it is that we are doing, the decisions that we are making that are shaping the future. I have a couple of examples of this from my own experience of the past three months in which I have been removed from the operating environment of a large university library. I have felt extraordinarily isolated from the kinds of problems that we are facing, and it has made me realize once again how important it is to be on the scene to really know what these challenges are.

Another example of about two years ago: one of the members of the Columbia University Libraries staff took a course in a library school on networking and wrote a

paper on collection development and RLG which received an "A" from the professor. She brought it to me and asked about publishing it. I was horrified when I read it. It was a well written paper, but it was all wrong. The point is that neither the professor nor the student had access to the correct information, because it is not documented. I noticed also that in one of the papers we were given to read for the program session there is a caveat saying that the information needed was not available and the authors did not have time to collect the data.

I have a proposal to make. I believe that the ARL and the AALS should sponsor and develop a series of seminars and workshops, or perhaps a three-week institute in the summer, for library faculty. It would be staffed and produced by research librarians on the major issues of today, the state of the art in contemporary libraries, and forecasts and trends for the future. Some of the issues that I think need to be discussed in this intensive kind of tutoring session are:

- Collection development in a shrinking economy.
- Preservation, the real issues.
- Storage technologies.
- Electronic publishing, ranging from online table of contents to published material with special data bases and full text information retrieval possibilities.
- Decision making in a technological environment, which involves the whole issue of retrospective conversion.
- Authority files.
- Subject access.
- Economics of information services to scholars.
- User forecasts and trends for the future.
- Distributive processing.
- Local systems support and central data bases, who does what?
- The architecture of information services.
- Personal computers.
- Local area networks.
- Bibliographic services.
- International scholarly networks and services.

All of these are issues that you and I know we are facing today in making decisions that shape what the future is going to be. But, we are not telling our

colleagues in the library schools what we are doing and the kinds of information that we are gathering, because we are not writing it down and it changes every day. The purpose of the institutes would be an intensive immersion of the faculty in, as I now find we say in the trade, online real-time decision making and in developments which are shaping our future directions, whether we like it or not.

The second purpose of these institutes would be to provide hard information and documentation to our library faculty colleagues. Also we would recognize our responsibility to keep them informed.

## Discussion

MS. McBURNEY: Thank you both very much. Before opening the discussion, I would like to ask the rest of you a few questions to be sure that you did in fact do your homework. Do you agree with the inference in Russ's paper that the number of library schools ought to be reduced by 50 percent? Have library directors been remiss in not doing something about librarians' salaries? Should our beginning librarians be getting $52,000 a year? Is it our fault that they are not getting such salaries? And if it is our fault, what can we do about it? Should ARL directors be involved in the major issue seminars that Pat suggested? Ought students to be educated in research libraries rather than in library schools? What should the ARL Task Force on Library Education be doing in the next two years, if indeed its mandate is extended?

You may agree completely with everything that has been said. Then again, you may not agree. This is your opportunity to speak out and we would like to hear from you. We would like to know what you think and what your questions are.

MR. WELSH (Library of Congress): On Pat's part, it appears that Russ ought to be the first to respond. She laid down a challenge to you suggesting that all the topics that she enumerated are not, in fact, addressed in library schools. I believe you ought to defend yourself initially.

MR. BIDLACK: I would contend that a lot depends in a given library school upon the communication between the faculty and the dean of that library school and the library staff and the director. All too often there is not the cordial relationship in the exchange of information that there should be. I believe Richard Dougherty and I have recognized this at Michigan and have made a determined effort to try to bring about that kind of communication so that the library faculty, particularly those concerned specifically with courses relating to academic librarianship, do have that communication. I know that is not true in every case.

Were the kind of seminar or workshop that Pat has proposed actually put into operation, I can assure you that I would find the money in the budget to send at least one member of the faculty (I do not believe it is envisioned that all library school faculty would be involved). Ed Holley and I compared notes and he agreed that he would certainly find the money to send someone. Certainly, the more such communication, the better. But if the director of the university library is a member of the faculty of the library school and comes to faculty meetings when he can, and

if a director invites the dean to come to his unit head meetings, for example, that at least provides a start. I know this varies from one library school to another. Surely many of us place high priority on that kind of communication and we recognize that you cannot get it just from reading the literature.

I would like to see a study made some time of the amount of recent experience and continuing experience that library school faculty have with the real world. It is something of a myth that we live in ivory towers and we have no association. I believe there is a fair amount of association, though not as much as would be desirable.

I did not answer your question well.

MR. WELSH: No, you did not answer it. This is a friendly question. At Columbia a number of years ago there was a distinguished professor, [Maurice] Tauber by name, who made it a point to travel extensively. Ruth French Strout at Chicago did the same thing. I do not find that happening today.

I wonder, Pat, if you were suggesting that it was enough for these two gentlemen to sit down and talk, or to broaden the base of it—to have Russ exchange views with you and somebody on the West Coast. It ought to be a broad base, because a tremendous amount of work is going on. There are a lot of changes being made.

MS. BATTIN: Yes. I believe it is laudable when these one-to-one communication channels happen. But what I am suggesting is that we need to set up a regular mechanism that does not rely upon individual personal relationships to make sure that this information is passed back and forth. That was why it seemed to me that ARL and AALS are particularly suitable organizations to establish such a mechanism, to assure that this information exchange happens, regardless of where one happens to be. I would think the idea of traveling more would be good, too. But there still should be a regular, dependable institutional activity that would be available for library faculty.

MR. WELSH: May I make one further point?

MS. BATTIN: Yes.

MR. WELSH: In the field of optical disk technology, I have a great concern about the future of classification and subject access. I am wondering how the panelists would respond and how Ed Holley would respond to this. Do you recognize that as a problem, and is something being done about changing the curriculum in any way, so that we are aware and we develop some strategies to deal with the new technology?

MR. HOLLEY: My visit with ARL last spring was true education for me. I went back and reported to the faculty on the LC "dog and pony show." It was just astounding, the kind of things that are happening—and I thought we kept up pretty well! As some of you suggested, I hope that presentation can be made available soon as a cassette program so we can show it to our students and staff.

It is very difficult in a fast-changing profession for all of us to keep up. I am

sure we do not read all of the things we should read. We come to meetings and we are flooded with documents; we read them on the planes and hope we get enough out of them that somehow we can muddle through. Pat's idea is excellent—we need to be doing a lot more of that. It seems to me that it would be very good to connect her seminar idea with a university library, the library school and the library, so that the faculty who have been away from practice for a while could interact with the staff. I would hope it would not just be people lecturing at each other.

It is quite true that the information transfer process among library school faculties and librarians is simply breaking down. Your optical disk technology is a very good example of that. However much we travel, we are not going to get as much information—there is no question about that. I do not know of any good library school in the country that is not grappling with the problem of curricular change. We have been doing it for a decade at Chapel Hill and sometimes one gets tired of it, just as libraries get tired of reorganizing the staff.

But we do not really have any alternative, because of all the things that Pat talked about in her paper, the most important was the necessity for the inquiring mind. We want the best and the brightest students; there is nothing more exciting than doing a seminar with really bright students who are eager and energetic and want to learn. We must find a way to stay on top of all of these developments and incorporate them into the curriculum as fast as possible. We are not doing it very well right now, I would say, Bill. I really welcome the idea that Pat tossed out this morning. It is a splendid approach and something that we ought to get started on as quickly as possible.

MR. ROGERS (Yale University): This is addressed to Pat. I would like to make it clear that I am very much in favor of raising librarians' salaries. It seems to me that we have at least a dual problem. We have to struggle within an academic institution with the faculty schedules; that is one thing. Secondly, it might be easy to raise the beginning professional salary, but one immediately runs into the entire scale. To do anything really noticeable, one would have a huge financial problem of moving the whole scale up. And to try to do that in the face of faculty salaries is very difficult.

I just wonder if we can ever solve the problem of the business school student or the law student getting $50,000 to $60,000 a year fresh out of school. And I know for a fact that this is what happens. The dean of our law school sits in deans' meetings and laments the difficulty of getting and keeping law faculty members in the face of that kind of competition. Somehow or other they do manage to get fairly distinguished people who are willing to teach rather than to go out and practice. And I do not know but what perhaps we have the same problem. We do need to work to improve salaries. But it seems to me that we are going to have to sell what we do on some other basis. I would be glad to have your reaction to that.

MS. BATTIN: I am glad you asked that question, Rudy, because that gives me a chance to respond to Russ about something we were talking about this morning. I quite agree with you. But there is also another element here. We are the one profession in which we stay in the same environment as the faculty that taught us. We have not had the help of the library school educators to raise our salaries. And, as you say, in a university environment we run right into that problem of the librarians making more than the faculty, particularly if we are making more than the

library school faculty. We have a problem there and we must start addressing it. The library school deans and library school directors must go to the university officers and lay out this problem in terms of the future of the school and the future of the profession and so forth.

I believe, too, that there are people who enter this profession for more than money. But we have to be careful that we do not sell ourselves that far down. We are not making enough now to attract good people. But I do not believe we have to go to the $50,000 and $60,000 that the downtown lawyers get. The engineers are having the same problem—nobody wants to stay behind and teach. It seems to me that we need really to make a case to the university administrations—and I believe it must be both the library school dean and the library director who do this—as to what represents reasonable compensation. I believe it is going to be more than library school professors are getting now. And I would say that if we raise the librarians' salaries, we could then work to help raise those library school salaries, because one must come first. Right now we are just killing each other.

MR. ROUSE (Okahoma State University): Pat, I agree with you that Russ just scared us to death and gave us some depressing news. But it is not his fault; he just pulled some facts together. I would like to ask Russ whether the 41 percent fewer graduates last year than seven years ago in the ten-year-old schools is a trend. Because if it is, I have some scarier facts here that I worked out in the margin on the airplane. By 1989 we will have 2,400 graduates in library science with a master's degree, compared with 6,800 seven years ago. Now, what is going to happen to us in our libraries, except that you have planted the seed for improvement of salaries?

MR. BIDLACK: I believe it is a trend. I do not have figures for this fall from very many schools, but the same trend appears to be continuing this year. And I suppose it may get to the point that you indeed have those jobs, as was true in the 1960s—that was a growth period. That is why we have so many library schools now, because everything was growing. We could not necessarily say they were splendid salaries, but we could assure graduates of a job, an interesting job. There is always a lag between the market and the graduates, and we continued to graduate more people than there were jobs for a while. I believe that same thing will happen again.

In most instances library graduates are indeed finding jobs, if they are mobile. But in our recruitment for these splendid CLR fellowships that we have at Michigan, which are $20,000 fellowships with tuition and stipends combined and are attracting people who otherwise would not have gone to library school, we are finding that the most difficult questions we had to answer were: Will we advance rapidly in the field? What will be our beginning salary? The answers that we had to give were rather depressing. We said that we believe you will have an advantage because you will be CLR fellows.

I guess my answer is yes, the trend will continue until such time as the market place is more attractive.

MR. ROUSE: When there are fewer graduates, the salaries are going to go up.

MR. BIDLACK: Yes.

MR. STUDER (Ohio State University): I would like to address what Rudy said

and continue the salary issue. It is one I have confronted head-on several years running, and there does not seem to be any solution institutionally. What Rudy said is so awfully true. We can all afford to raise beginning salaries, I do not believe that is difficult. But we cannot afford the ripple effect. In a staff of the size I have, which is probably at the median for this organization, it would take several hundred thousand dollars to do the proper kind of adjustment, and one simply cannot be that unfair to the remainder of the staff. Salaries are compressed the way it is, because we have tried to push the bottom against the top to achieve just a little bit of what Russ wants to see.

I agree that it is terrible for someone with six years of higher education to be offered $15,000 in this economic time. But I have gone to my institution, which every year reserves a good deal of money for what they call "equity and marketplace adjustments," and pointed out very carefully with good statistical analyses that we are much below the average compensatory levels for the four ranks. (We have equivalent ranks at Ohio State.) They agree with that, but they are not very impressed. They want to know how we compare with the marketplace, and the Big Ten is very fond of using itself for a comparison. The fact is that we rank toward the top in the Big Ten and when I have to admit that, they say, "That is the end of the discussion," and I go home and try to make the case a different way next year.

I do not really see any solution. It is supply and demand. The English professor commands a great deal less than the engineering professor. They simply look at library salaries as a function of the marketplace and they see that, comparatively speaking, Ohio State pays pretty good salaries to librarians.

MR. BIDLACK: One thing that you all can do for us is to help us recruit the kind of people you want. I thought when we received the grant from the Council on Library Resources for our special program in academic librarianship that some of our best candidates would be recommended by library directors who have said, "Gee, we have had this person as an undergraduate working part-time in the library and he or she is just ideal for a career in academic librarianship." We received relatively few nominations from that source, though we had expected that there would be many. So you can be helpful to us in this regard, in recruiting for us the brightest and the best.

MR. ANDERSON (Colorado State University): It is amazing how many people read papers on the airplane. Bob Wedgeworth can attest to our reading, I believe, a few hours ago. But I would like to quote from the learned lady from Palo Alto and New York, and then ask the learned gentleman from Ann Arbor if he would respond.

Quote from Pat: "If we are to develop the kind of talent necessary to assume the awesome responsibility for the management and provision of scholarly information in all its formats in our universities in the year 2000, we must relinquish our long-held notion that one faculty, one curriculum, and one set of admission requirements are adequate for all who share the title librarian."

If, indeed, that is an acceptable premise, I would like to hear what either Dr. Bidlack or Dr. Holley might respond.

MR. BIDLACK: I believe there is flexibility in this regard at the present time. We have admission requirements, but we frequently make exceptions, particularly

when you urge us to do so. We pay very close attention to your recommendation of an individual who might be different from the typical student coming to us, and I believe that Ed and I would agree that we would certainly make an effort to admit that person. At least where library schools are in major universities, they can certainly call upon the library itself to be of assistance; Dick Dougherty is teaching a course for us right now in problems of academic librarianship. We do have that flexibility.

MR. HOLLEY: I believe that probably in the larger library schools there is a common core curriculum. We have an integrated core at Chapel Hill as a few other schools do; others have individual courses lumped together that everybody has to take, because the fundamental assumption is that everybody ought to know these certain things, whatever they are that you can identify. And then the schools go off and specialize in all of the other areas and put together a package that makes sense for the career goals of their students. I believe that takes place in maybe a dozen or 15 schools.

One of the things that Russ points out in his paper, though, that makes this difficult—he alluded to it a while ago—is that library school faculties are very small. They are generally the smallest faculties on any university campus, and therefore you are limited in what you can do by the number of faculty. I am absolutely appalled that any school can be accredited with a full-time faculty of five or six. I do not believe that, if you take all of the things that Pat says about changes and all of the things that she would like for all of us to know, you can conceivably do that with the limited expertise you will find in a faculty of five or six. Indeed, most of us ought to have a faculty of 20 with some basic common core of knowledge and specialization in two or three areas to be reasonably comfortable with the kinds of students we get. And one also expects in a graduate professional school that the faculty will do research and publish and add to the store of knowledge in the discipline.

One of our problems in this area is how much specialization one can get with a faculty as small as most library schools have. The average faculty size is somewhere around ten, but I do not remember the figures you gave, Russ, of how many are below ten. It is an incredible number. And, of course, that is a problem that, as I have suggested rather frankly to the Committee on Accreditation (COA), ought to be taken more seriously than COA has been willing to do in the last decade. Some schools really ought to die and they ought to die quickly, but they will not. It is very difficult to kill an academic program, as all of you know from subject departments that you have tried to kill on your own campuses in order to get the dollars that you need to raise the salaries of the business professors and all the others that you need to keep. It is also very difficult to kill a library school program, unless you just say absolutely, "Don't admit any more students," as is the case at Minnesota. That will effectively kill the program while it is studied, you know.

So the problem of the numbers makes a difference. Whether a library school in relating to the total library profession can afford the luxury of developing one specialty as it relates to librarianship, I am not at all sure. Some schools already provide a majority of their students for academic or special libraries—maybe we should just ignore the public libraries and the school libraries. Realistically, in a state university that is not an option, for all the political reasons that you can imagine.

I believe, Pat, that some of us do what you were suggesting. We do not do it as well as we could if we had more resources. The idea of developing a very specialized unit, though, is a tough one, and chiefly for those demographic reasons.

MS. BATTIN: Let me just respond to that, since we are all friends here, by saying some things that are probably controversial. I would question whether school librarians need a master's degree program, particularly in a research university. There is a place for that kind of educational program; it is simply not the same as that a research librarian needs. We are talking about some very different kinds of requirements. It does not mean that one is better than the other; they are just different. The skills and abilities needed to run a school library are very different than the kinds of skills and abilities that are needed in the university.

The second thing is that I quite agree with everything you say and I am wondering if there is a different way to do it. The overhead costs of maintaining this kind of faculty are probably out of the question. Therefore maybe what we need to do—I hate to say this—is to shrink the library school to a faculty that is the synthesizing, coordinating part of our discipline and have cross appointments or joint appointments with faculty experts in all the other discipline; make it an interdisciplinary program in the way that universities have interdisciplinary programs. One would take someone in the management area, for example, and not have them teach management of profit-oriented activities, but have them develop an expertise in nonprofit management or library management. In the engineering schools, in the computing science departments, and so forth one would have people develop a specialty for the library questions, rather than try to have all of these talents represented in the library school. Is that a possibility?

MR. HOLLEY: Let me respond to the last first, and then I want to defend the school librarians. We are already doing some of that. We could not possibly offer in our library school the course that the business school offers on the management of not-for-profit organizations. We do not attempt to; we send the students over there. The same is true in public administration for the theory of organizations. We do not have that expertise and as long as we can freeload on them, we will continue to do so. There are problems involved in that, but they are not problems that cannot be solved. We do not make as much use of that as we could, but a lot of us are already doing it.

MS. BATTIN: I was not talking about sending students to the other school. I was talking about a joint appointment in which that person is part of your faculty, but holds tenure in the other department. It seems to me that there are two different models that are used in institutions.

MR. HOLLEY: Well, we do some of the other, too. We split up a faculty position and pay for a part of a faculty member. It sounds wonderful, but in reality it has its own set of problems. Where is your home department, and particularly where do you get your rewards and promotion and tenure and so forth? But, yes, we do some of both. And I believe we simply have to; there is no other solution. We are not going to expand the faculty. But we can make use of the specialized expertise.

I am going to try to transmit what I believe the more advanced school librarians would say to you. They would say that at least as far as many academic libraries are concerned, though perhaps not the elite research library group that is here, many

schools are far ahead of academic libraries in terms of the use of microcomputers and a host of other of the new technological devices. Indeed their needs for a graduate professional program are much stronger than you would indicate, and some of these have common elements with other types of libraries. I would not pretend that that is true for all school systems. But there are some school systems that are very much advanced technologically. And some of these problems will solve themselves, because by the time those students get to us in library schools, they will know all of the things that we now have to teach at a pretty fundamental, elementary level.

MS. BATTIN: In certain areas I have no question that these schools are ahead. I am not looking at who is ahead and who is behind. I am looking at it as a different kind of emphasis, in the same way that people with either a bachelor of science in education or a master's degree in education do not end up as members of faculties of research universities. I am saying that research librarians, and particularly those with academic status and who hold faculty appointments and so forth, must have a different kind of educational background, because we are operating in an entirely different environment and facing a whole different set of problems. I believe trying to educate everybody within the same curriculum is just not going to work.

MR. HOLLEY: I guess I am saying that we do not do that. Within the framework of what we are doing, we do some things that are common to all types of librarianship and we do specialization for all of these differences and then we track as much as we can. So I do not disagree with you about the needs. They have certain kinds of needs that we cannot provide in the library school, just as we would not for the research library track.

MR. BIDLACK: Some deans have been meeting rather regularly with personnel directors of large public libraries and the problems that they present to us sound very much like the ones you are presenting.

MR. HOLLEY: The directors of large public libraries are asking the question, "Why are we not getting the best and the brightest?" too. It is a good question.

MS. GAPEN (University of Alabama): I would like to come back to the salary issue one more time, because I think it is significant in changing the sort of people that are attracted to librarianship. When I talk about salaries with the Vice President for Academic Affairs at Alabama, he looks at two things. He looks at the comparable regional salaries. But then he also looks at the productivity of the people who are in the library and who have faculty status and rank. And clearly they are not as productive in terms of service and research as the other faculty members are. The way that we are trying to deal with that is to hope that somebody in the region has higher salaries. And I am sitting between two women from Canada who have enormous salaries.

(Laughter)

MS. McBURNEY: For their staffs.

MS. GAPEN: For their staffs. And I am going to start comparing us to them!

The second thing that we are trying to do is to provide the time and enhance the

skills to try to bring about a new commitment of the library people in research and service areas. Partly that is difficult because they do not come to the library from library school with that kind of commitment, nor do they come with that kind of training. And I believe there is a very large lack of awareness of what academic rank and status mean. That is something that could relate to what happens in library schools today.

MS. MARTIN (Johns Hopkins University): I would like to go back to a topic that Russ referred to: what we can do or what we as library directors, library administrators, should be doing to recruit people to library school, to the profession.

I would like to ask everybody a question. Last year I adopted for the Hopkins Library a model that I learned at Harvard about 15 years ago, that of setting up an internship program whereby people who are working in the library as support staff, who are obviously there for an extended period of time and might consider making librarianship a career, would be offered an incentive—some time off, a little bit of support for tuition—to go to library school and then come back. We have a policy worked out; we do not guarantee positions, but obviously we would be very careful in looking for positions when this student graduates. I would like to know how many other people have this type of arrangement within the library. (Show of hands.) What would that be, about 15? Good. That is more than I would have anticipated.

Just for your information, we now have five people going to school at the University of Maryland at College Park, and I started out with an allocation in the budget of $2,500. That has been increased slightly, but it is still not very much.

MR. SYLVESTRE (National Library of Canada): There is something similar that has been promoted by the Canada Institute for Scientific and Technical Information (CISTI), which was elected to ARL membership earlier today. For 15 to 20 years they have had a fellowship program whereby they give fellowships to people who have science degrees, because most of the graduates have arts degrees before they go to library school, as we all know. Many of these people have doctorates in science or engineering degrees. CISTI gives them a fairly substantial fellowship and then a job. This way CISTI recruits the kind of people they want, because they select them.

MR. PINGS (Wayne State University): I have had the experience in the last six weeks of interviewing about ten people just out of library school for jobs. We do have jobs in Michigan still. I ask an open-ended question, "What is your interest in technology or what do you know about this?" Oh, boy, they know all about this. What I found out is that they have taken a course which I could identify as "computer appreciation" or "electronic appreciation."

(Laughter)

Now, there is another course called, "The future of electronics."

(Laughter)

Then they say, "Oh, I have taken this course and I know how to do searching." And now I go back a bit further with the people we have hired who say that they have taken these courses. BRS comes along, Lockheed comes along, and offer

training courses—we are always sending people to these courses. Well, they do not really have the experience. This is the connection of the real environment versus an academic one.

I do not know how we are going to get this real world that Pat is talking about, the electronic world. It is not coming in from our library schools. However, I do know that we are hiring merchants, vendors to come in and operate our bibliographic apparatus. And if you believe that they are being paid $12,000 or $15,000 a year to keep your circulation systems going, you are mistaken.

Somewhere we have got to start saying before you come into library school, you are going to have to have a computer language, as we say you have to have French or German or whatever else. If we are going to talk about technology, we must get people who can use computers, not just "appreciate" them. They have got to be trained as we train catalogers, or used to, when they could come out of library school and begin to catalog. We do not have people coming out of library school now who really have the knowledge and the kinds of skills catalogers used to have. We do not have them, even though microcomputers are there in the library schools. We can insist, I should expect, that people have this kind of knowledge before starting a job.

Right now we have microcomputers and we said to the staff, All right, we will teach you something about a microcomputer—four or five hours worth. I did not know what would happen. But we have over 100 people in the library—the whole staff—who suddenly want to take this course on what is a microcomputer. What are we going to do with a staff who all of a sudden has four or five hours of knowledge about microcomputers?

I do not know the answer. We are talking about curriculum, we are talking about salaries. All right. But where is the knowledge, where are the skills that we need? And I am beginning to see, certainly the staff that I am involved with are beginning to see, that there are microcomputer applications and they simply must have the skill. I am not talking about theoretical knowledge; this is skill.

MS. McBURNEY: It seems to me that one of the places they ought to be learning this is in our libraries. The library school students are obviously using libraries. And if they are using libraries that are automated and using technologies, then they will learn about those technologies.

MR. PINGS: That's games. That's games.

(Laughter)

MS. McBURNEY: Not in my library, it isn't.

MR. PINGS: To pull back a search—it is a Pac-Man game! I am talking about getting inside and manipulating and organizing.

MR. DOUGHERTY (University of Michigan): I want to go back to the salary question for just a moment from a slightly different point of view. I believe we are being overly timid in dealing with this question with university administrations, for the following reasons. In the last 18 months, because of a lot of developments, more and more academic administrators are learning more about libraries—probably more

than they ever really wanted to know, but nonetheless, they are. They are also finding out that just the plant costs, the energy costs, of running libraries are going up into the millions of dollars. We think of our budgets in terms of the ARL budget that we publish. On many campuses the actual cost to that campus is probably twice in real dollars what we publish in the ARL Statistics, for example, for a medium-size library over this decade, perhaps $100-150 million. But your annual budget stated in the ARL Statistics might be only $5-7 million.

Therefore we are becoming a very expensive resource. We have some very expensive problems before us, whether they be preservation, bibliographic control, or microcomputers. We are going to need whatever "the best and brightest" means to solve these problems. It may become worthwhile to the university to pay higher salaries so that we can solve some of these problems or at least ameliorate them. And it might be cost-effective to think in terms of quite a different salary schedule than we have up to now.

MR. ROGERS: I would like to make what I hope will be a constructive suggestion, and in a way this is addressed to the staff as well as to each of you. Are we not hurting ourselves by keeping our light under a bushel? You look at the ARL Statistics and see the number of us who are paid $50,000 or more. Instead of trying to push this stone up the hill from the bottom of the schedule, why do we not start reporting more salaries above $50,000 to let the world know that librarians are not all just paid nickels and dimes? Maybe we can pull the salary schedule up, if we can not push it up. We ought to be reporting at least another $20,000 on top of the present $50,000 level. Let us tell each other. This is good ammunition when you go to see your provost.

MR. CHURCHWELL (Washington University, St. Louis): I heard the two educators who are here. I am not going to say anything new, because they have heard it. But I want to try something else.

There are studies which say that people can do a very good job of cataloging books without having gone to a library school. We have studies that show that a large number of reference questions are answered by people who have never gone to library school but have had very good in-service training. If that is true, and I believe it is, maybe we need to look at the salary question a different way. Why can we not teach this core course that Ed mentioned, and that practically every library school has, at the undergraduate level? At the same time, we would begin recruiting people when there is an interest. We could get the engineering students, we could get the physics students at that time and let them know that the kinds of problems that Pat has mentioned will be waiting for them. But we must get the student at some point other than where we are getting them now. I believe that is one of the big problems. To a student with a bachelor's degree, then, with the understanding that it is an open-ended system with a bachelors degree, the $15,000 and $16,000 will not look so bad.

MS. McBURNEY: We have time for one more question, or comment.

MS. TAYLOR: I have been talking lately to several people who are now original catalogers, and I have noticed something that I have only begun hearing from them. These people are beginning to develop a real fear that within their professional lifetime their specialty—what they do—is going to disappear, and they will be left

out in the cold. Part of this is related to technology and part to other things. Based on this, I have two questions to address to Dr. Bidlack. One is are we thinking at all about how we can "retool" people if there are tremendous changes in library roles as we know them? Secondly, what are we doing with the students today who are enrolled in library school and who, for all I know, may still be taking cataloging courses not too different from the one I was enrolled in some years ago?

MR. BIDLACK: Well, I hope the latter is not true. At our place we do have a full-time coordinator of continuing education, a full-time faculty member. One of the problems in continuing education is that many librarians assume this is the obligation of the library school, without cost. Just as we have to charge students tuition to earn the master's, a library school offering continuing education opportunities is going to have to charge for this, and it can be rather expensive. We have made a commitment to continuing education. I admit that as a state institution it is primarily to the State of Michigan, and these tend to be one-day, sometimes one week, institutes. But I believe this is going to grow.

I am sure there are library schools teaching cataloging the way you and I, or particularly I, learned it. I believe those are the ones that should probably be eliminated, but I am not sure they all will be, in the process that I have outlined. I cannot believe that, at the schools that Ed and I would agree are the good schools, this is still true.

MS. BATTIN: I would like to refer back to Charles' question and ask the two deans if they have any difficulty with admitting juniors and seniors to their core courses. I know that in graduate schools, I am not sure about professional schools, but certainly in the arts and sciences at many universities, juniors and seniors can take first-level graduate courses. Is that a possibility?

MR. BIDLACK: Yes, it is. We rarely have a request. And I admit that students in engineering probably do not know about it. I guess I cannot be sanguine in thinking that if we advertise this, we would get very many takers.

MS. McBURNEY: You might try.

MR. BIDLACK: We might try.

MR. HOLLEY: We would not.

MS. BATTIN: You would not take them?

MR. HOLLEY: We would not.

MS. ECHELMAN: I would like to make a comment on this afternoon's program. There is hidden among us, and he shall remain nameless, a university administrator who suggested to me this afternoon that part of our audience is missing. We should be talking with the chief administrative officers of universities about this, and they should have been at this meeting this afternoon. I thank him for that comment and assure him that we will take it into consideration in the future.

MS. McBURNEY: I would like to thank our two speakers and I would like to thank all of you for participating.

## BUSINESS MEETING, SESSION II

[Following an informal discussion of a planning process for the Association, the ARL Business Session II convened at 4:45 p.m. on Thursday, October 14, with President Abell presiding.]

### Special Election for ARL Board of Directors

MS. ABELL: We have two items of business. The first is to elect a member of the Board for a one-year term. The Nominating Committee brings to you the name of John McDonald. Are there any additional nominations?

(No response)

MR. ROUSE: I move that the nominations be closed.

(Several seconds)

MS. ABELL: All those in favor, signify by saying "aye." Those opposed "nay." Thank you, John.

### Discussion of 1983 ARL Budget and Dues Increase

MS. ABELL: The next item on the agenda is the recommendation from the Board on 1983 dues. That will be presented by Shirley Echelman.

MS. ECHELMAN: The budget I have prepared is in effect a maintenance budget and does not reflect the planning for the Association that is currently in process. It was sent to you on September 21, along with additional material that attempted to illustrate what our sources of funds are and where our expenditures lie.

There is one thing I would like to point out to you about funding. This organization is facing a situation which I believe we all ought to recognize. We have in the past from time to time, not every year but from time to time, supported ourselves by withdrawing money from our reserves. Also, we have supported ourselves in the past couple of years partly by being lucky enough to benefit from the extraordinarily high interest rates that prevailed in the economy. Both of those situations are changing. We no longer have excess reserves that can be drawn upon for operating funds, because we are approaching the situation where our reserves equal those which are recommended by our auditors for maintenance of the organization in case of crisis situations. Interest rates continue to drop; in fact, I would say they continue to plummet. We do not know what is going to happen after the election in November, but at least for the short term they are plummeting. That means, for this organization, support of ongoing programs must come from dues, because they are the only other source of income that we have. Dues income has to pick up the portion that shrinks from the other income sources.

Having made that introductory statement, I would like to ask whether there are any questions or comments on the budget that has been presented by the staff to the Board, and the dues increase that has been recommended by the Board to the Membership?

MS. ABELL: If not, may I assume that you are ready to vote on the recommendation of the Board that the dues for 1983 be increased by $550?

A MEMBER: I have one question. The 1982 budget provided $8,000 for professional services and the projected year-end figure is $16,000. Could you explain why?

MS. ECHELMAN: This is one of those situations where you have to respond to something that happens in the environment that affects you. About February of this year, I attended the second of what has become a long series of meetings with the publishers and the Copyright Office staff at the Copyright Office. At that meeting, I began to be very concerned that the issues that were being raised by the publishing community in those meetings, and the attitude of the staff of the Copyright Office required that any ARL representation or participation by me on a continuing basis in that activity required that we have legal counsel. This is not hiring of a lobbyist; it is the hiring of legal counsel, which is quite different. Accordingly, I asked ARL's legal counsel to accompany me to the next meeting just so he could test the waters and tell me whether I was being paranoid or whether there was really something to be paranoid about. I then talked with ARL's ad hoc working group on copyright, and with the Executive Committee. The opinion of our lawyer is that not only was I not paranoid, but we were even more threatened than I had thought we were. We have maintained very close contact with legal counsel since then.

We have asked counsel's opinion and help in preparing the comments to the King Report. We have brought together at ARL, and under ARL's auspices unofficially, legal counsel from ALA, and from ARL and the executive directors and other participants from library organizations to discuss the implications of the publishers' comments on the King Report strategies. We requested their analysis of proposals that are being made by the publishers and by some of the other parties involved. What we thought was going to be $3,000 in legal fees has turned into what will probably be $10,000 in legal fees this year; the other $6,000 in that line is our auditor's fee and other small professional fees. I fully expect that that situation will continue and, indeed, it may grow worse next year. That is a choice that the Membership needs to address. Do we need legal counsel to that extent? I strongly believe we do, but if you would like to discuss it further, I would be glad to discuss it with you.

MEMBER: I am glad to have the explanation. Thank you, Shirley.

MS. ABELL: John.

MR. McDONALD: If there are any questions, I should not say anything. But it is very much in the tradition of ARL, I believe, and anyone who attended the copyright session today would have to agree that we are far from out of the woods on this issue.

MS. ABELL: Are there any other questions?

A MEMBER: I do not know very much about the rent situation but does the landlord have a stranglehold on us? The budget shows a 73.6% increase in two years. Can we not get a longer term lease?

MS. ECHELMAN: Yes, we did that. We negotiated with our landlord—the American Political Science Association and it has a very gentle stranglehold on us—a three-year lease this time instead of a one-year lease. What has happened is that for many, many years the American Political Science Association never raised our rent. They went through a management audit last June and discovered that they were not getting the return that they needed. Our rent for that space is about half of what commercial space in that area would cost, but there was a 15-1/2% increase in rent for this year ending July. In addition, we took over a little more space that had been used by the Center for Chinese Research Materials. We needed additional storage space for materials and space for some of our support staff. This rent, you understand, is only ARL's rent. Part of the rent is paid by the Office of Management Studies, by the Center for Chinese Research Materials, and part by ARL's Executive Office. The total rent is about $40,000.

MS. ABELL: Other questions? Are you ready for the question? All those in favor of the proposed dues increase, please indicate by saying "aye." Those opposed "no." The "ayes" have it and the dues increase has been accepted.

## Change of Officers

MS. ABELL: The time has now come for me to relinquish the chair. I must tell you frankly that I do not do so without considerable regret, because I have really enjoyed this job. During this year, with your encouragement and participation, I believe I have seen genuine continuing momentum. Many of the aspirations of the Board, from open participation in organizational decisionmaking to establishing mechanisms for setting direction for the organization and, as we saw this afternoon, a real member commitment to an active organization, all seem to be within reach.

It has been a joy to serve with various members of the Board. In particular, I would like to acknowledge the two retiring Board members, Charles Churchwell and Past President Jay Lucker. They are people I first knew as acquaintances three years ago. We have worked hard, I believe, to open this organization and bring direction to it simultaneously, and in that process we have become genuine friends. I am going to miss our chances of getting together regularly three or four times a year.

I also want to acknowledge and thank the extraordinarily hardworking and capable staff at headquarters. Only the president truly is in a position to realize how hardworking they are and particularly a West Coast President, who can call at 4 o'clock in the afternoon, when I finally realize I have forgotten to talk to them about something, and find them in the office at 7 o'clock in the evening on the East Coast. I really appreciate your work: Shirley, Duane and his staff, Carol Mandel, Nicola Daval. Thank you very much.

It is now time for me to leave my favorite job of all those that I have had in

professional associations and to turn the gavel over to a man I know will be a splendid president. Congratulations, Jim

MR. GOVAN: It is customary at this time for the Incoming President to make a few pleasant remarks about his predecessor.

MS. ABELL: Do so.

(Laughter)

MR. GOVAN: Will you be quiet for a minute!

(Laughter)

And in this case I believe it is imperative. However, she did to me what she claimed I did to her earlier. She has stolen everything I was going to say. I believe this presidency has been a real landmark in that the organization has indeed opened up and I would like to take just a minute to specify that a bit. The budget information that is now given the Membership is much more detailed and informative than it was. We have established the membership-only meetings, which I think most of us agree have been beneficial. We now have open committee meetings and the beginning effort to get committees to come back in touch with the Membership, such as we had this morning. But that, again, has not been all that Penny has done as our President. The planning process which she has initiated and the much more clean administration in the office and with the Executive Board, the inclusion of the Executive Board in some decisions where they were not formerly included, and her work with the staff, all have added to the efficiency of the organization. Then last fall and last spring, in addition to all this, she supervised two truly excellent programs. When you consider she did half of that, at least, with a broken leg it is really quite an achievement. We hope we can still call on your counsel.

MS. ABELL: Definitely.

MR. GOVAN: Is there any other business? Then I declare the 101st Meeting of ARL adjourned.

APPENDIX A-1

# DOCUMENT DELIVERY AND RESEARCH LIBRARIES

Jay K. Lucker
Massachusetts Institute of Technology

For the purposes of this paper, document delivery is defined as the process by which a source item or surrogate copy is provided to a library user regardless of the form of the original. Delivery could, therefore, be in the form of print, microform, electronic transmission, video or optical disc. Document delivery in research libraries is further subdivided into internal and external modes. Internal document delivery covers material owned by a research library; external delivery, materials obtained from any other source.

Development of efficient document delivery systems presumes the prior existence of satisfactory means for identifying the location, but not necessarily the availability, of desired materials. Among the issues related to document delivery are such matters as the adequacy of local bibliographic systems; accurate information on local availability as provided by circulation systems; local, regional, and national location systems; interlibrary loan systems that include transmission and acknowledgment of requests; and the development of mechanisms for the recompense of libraries and other agencies that provide documents.

Document delivery is a major concern of research libraries for a number of reasons:

1. Increased costs of materials and the growth in the number of items published internationally require research libraries to become more interdependent.

2. For the reasons cited above, libraries, other than research libraries, have become and will become more dependent on larger libraries or on other sources for obtaining materials not in their collections.

3. Economic pressures have caused many research libraries to reduce the number of copies of research materials they acquire so that with a relatively steady population being served, local availability has become less reliable.

4. Storage and binding costs have increased to a level where it is often more economical not to retain less-used material, causing increased dependency on major document deliverers such as the Center for Research Libraries, the British Lending Library Division, commercial sources, and potentially, a national periodicals delivery system.

5. The availability of large bibliographic storage systems, especially for periodical literature, has increased the number of requests for articles from esoteric, less available titles.

## Internal Document Delivery

After a user in a research library identifies the existence of a needed item in that library's collection and if the document or a copy is available, a major problem for research libraries is getting the material into the hands of the user. While a problem for all libraries, it is of particular significance in large, decentralized systems where the document may be in one of several locations. If an adequate bibliographic apparatus and a communication system (mail, telephone, computer) exist, the actual delivery of materials may be accomplished in a number of ways. Many research libraries have campus delivery systems using trucks, vans, station wagons, bicycles, and messengers. Patrons themselves, of course, are often a major means of delivery. It is conceivable that until technology provides some means for transmitting large amounts of printed information quickly and inexpensively, the mechanisms cited above may be the most efficient methods of delivery for books or other lengthy documents. A substantial amount of traffic within research libraries, however, involves the delivery of relatively brief documents, specifically periodical articles, and for this type of traffic a substitute means such as electronic document delivery may be preferred. One scenario for demonstrating the feasibility of such a system is described below. Electronic document transmission may also be seen as a useful adjunct for libraries that store information in remote storage facilities from which it may be more economical to transmit a short article than to deliver the entire bound volume.

## External Document Delivery

For the purpose of this section of the discussion, it is useful to divide the question of access to documents not held by an individual research library. For materials of substantial length, basically monographs, it seems unlikely, given present technology, that there is an economical substitute for the original work. Most books will probably continue to be published in printed form, although a considerable amount of such information is already in and will continue to appear in microform. The substitution of a microform for an originally printed work is feasible if (1) the holding library already has the material in that form and is willing to lend or make a copy, or (2) the borrowing library is willing to pay the cost of producing a microform or to share the cost with the holding library. The cost of producing the copy is substantial given the need for verification of completeness; subsequent copies are considerably cheaper because of the relatively automatic nature of the process and the current availability of high-speed, low-cost reproduction methods. In any case, external physical delivery of monographs would, for the immediate future, still require the use of manual systems like the U.S. Postal Service, United Parcel Service, and local and regional delivery systems.

The greatest potential for the application of technology to document delivery seems to be in the realm of shorter documents, especially periodical articles. This possibility is not insignificant, with the current volume of such traffic representing as much as 60 percent of research library external requests.

The current means by which most research libraries obtain copies of articles from other sources have, with some exceptions, a substantial number of shortcomings. The principal ones are the following:

1. Wear and tear on the original caused by the use of flatbed photocopiers. This process causes damage to both paper and binding. It is alleviated somewhat in libraries that microfilm the original and then enlarge through a process such as Copy-flo, but few libraries are using such equipment.

2. Removal of the original from its normal place in a library's collection for a substantial period, thus inconveniencing local users.

3. Reliance upon manual delivery systems for delivery of copy, producing a relatively long turnaround time.

Some of these difficulties have been overcome by the use of substitute systems. A number of commercial document deliverers, for example, can supply copies from dedicated collections like University Microfilms, Chemical Abstracts Service, and the Institute for Scientific Information. These services, while providing copies at reasonably competitive prices, are limited in terms of the size of their collections. There is also the problem of identifying the availability of the material, a matter that will be addressed later. Facsimile transmission does improve the situation with regard to speed of delivery, but this method still requires the production of a flat paper copy (reproducing the problems cited in 1 and 2 above). Facsimile transmission is also significantly more expensive than photocopying and mail. While some developmental work is being done on direct facsimile transmission from bound and unbound volumes, the transmission cost problem still remains.

## Possible Areas of Research

Several areas of investigation have been or are being proposed to deal with some of the problems of delivery of short documents. They include (1) the enrichment of the CONSER data base by the inclusion of information on abstracting and indexing services and on document deliverers; (2) electronic document scanning and transmission; (3) full text storage and delivery by electronic means; (4) a national periodicals delivery system; and (5) video and optical discs. Each of these is described briefly below.

### 1. CONSER Project.

A proposal has been developed jointly by the National Federation of Abstracting and Indexing Services (NFAIS) and the Association of Research Libraries to increase the amount and accuracy of information contained in the CONSER data base. The specific aim of this project is to provide information as to which A&I services abstract or index a particular serial titles, adding this data to existing records in CONSER or, in cases where a title does not appear in CONSER, adding full bibliographic records including A&I service information. A by-product of the input of the data will be information on document availability where the A & I service is also a document supplier (e.g., Institute for Scientific Information and Chemical Abstracts Service). A further enhancement, although not included in the existing proposal, would be the addition of holdings information for other document suppliers like University Microfilms. This enhancement of CONSER added to the impending addition of Universal Seriais & Book Exchange. Inc. (USBE) holdings data will have a beneficial impact on periodical article access for research libraries including the

possibility of reducing the present burden on net lenders. The proposal still requires financial support to complement the contributions-in-kind being offered by the participating organizations: NFAIS, the Library of Congress, the National Library of Canada, OCLC Inc., and ARL.

2. Electronic Document Scanning and Transmission.

A proposal has been prepared at the Massachusetts Institute of Technology jointly by the Laboratory for Information and Decision Systems (LIDS) and the Libraries to develop an electronic document scanning and transmission system for interlibrary document delivery. The basic elements consist of document scanning, digitalization and compression of data, transmission over high-speed telecommunications lines or by microwave, and remote printing. The system could be used within a multi-library campus environment or from library to library. The proposed system eliminates two of the shortcomings of the present system described above (wear and tear, and time) and, because of the speed of copying and the possibility of having scanners in several locations, reduces the amount of time the volume is off the shelf. Funding is being sought for both development of equipment and a pilot demonstration project. The system can easily incorporate electronic message switching and access to online serials files.

3. Full Text Storage and Delivery of Documents.

It has been suggested by many that, given the tremendous storage capacity offered by current computer systems, the wave of the future for information storage is full text storage, scanning, and delivery by electronic means. The assumption is that information is published in electronic form (simultaneous publication in print is not precluded but increases costs), that it may be scanned by remote terminal and searched using indexing terms or natural language, and that documents may be ordered and delivered to remote locations. The American Chemical Society is experimenting with 16 of its primary journals being made available online. Another system is being proposed by a consortium of European publishers to provide access to scientific, technical, and medical journals. This system, Article Delivery Over Network Information Service (ADONIS), is in the developmental stage and it is anticipated that $2 to $3 million will be needed to carry the project. Most of the discussion of full-text storage and delivery systems appears to be centered on scientific and technical journals presumably because of the high cost of publication, the need for quick access, and the relatively high obsolescence rate of the subject matter, the last reducing the necessity for storing many years of publication online. Use of such systems for the humanities and social sciences seems less likely at this time.

4. National Periodicals System.

The concept of a national periodicals delivery system has been a major concern of research libraries for a number of years. The two most viable means for accomplishing such an objective would be (a) a dedicated collection of periodical issues from which libraries could order individual articles (i.e., a National Periodicals Center); or (b) a network of individual libraries and commercial document suppliers with assigned responsibilities. Even if either option were politically feasible and necessary agreements between the parties involved were developed, several technological problems remain. If the primary storage medium is print, there

is the question of method and speed of delivery. If the storage medium is microform, delivery is still a problem, as is the matter of how the information gets into microform in the first place. Many journals are not available in microfilm or microfiche either from the publisher or a commercial document delivery service like University Microfilms. Even when microform is available, it is often not simultaneous with the print version but is delayed by as much as six months to one year. In either of the cases mentioned above, electronic document scanning and transmission would be a useful adjunct.

5. Video- and Optical Discs.

Videodisc and optical dis"s are seen by some as the solution to the problems of storage and dissemination as they pertain to libraries. Both have great storage capacity, are relatively inexpensive to produce in volume, are easily stored, and can be used in conjunction with information retrieval systems. As means of original publication of information, however, the large capacity presents problems; a single issue of a periodical, for example, fills a very small portion of one side of a disc. These media would seem more applicable to the original publication and storage of voluminous information like that contained in encyclopedias, major reference works, and collections.

Optical discs in particular, however, are extremely attractive storage media for information already existing in libraries, especially that which is in deteriorating physical condition or which has very high use. The experiments being conducted by the Library of Congress and the National Library of Medicine are quite exciting in terms of potential long-range impact on research library collections. Both of these experiments, however, are aimed initially at in-house access and document delivery to outside users still remains at issue. Should these experiments prove economically and technologically feasible, the addition of electronic transmission capabilities would appear highly attractive.

## Economic Issues

Any major improvement in the storage and dissemination of information, particularly that contained in periodicals, has serious economic implications for libraries and for publishers. Among the major concerns are:

1. As libraries expand the concept of resource sharing, and if the number of subscriptions to particular journals declines, what happens to the price of an individual subscription? Will important journals be forced out of business?

2. Long-distance telecommunication costs, especially those involved in multi-state or multi-national transmissions, are now prohibitive for some of the systems described above. Are there other means of communication, such as satellites or cable, adaptable to these projects?

3. If publication on demand becomes a reality through full text storage and transmission, how will publishers be reimbursed for their costs? How will charges for each article be determined when the ultimate

number of uses is not known? What happens to copies ordered by libraries for patrons? What happens to the role of the research library as storehouse of information when the journal is published only in electronic form? Who pays—the library or the patron?

4. How can large research libraries that hold unique collections of monographic material be reimbursed for the loan of such material to other libraries?

5. What can be done to alleviate the interlibrary loan burden on the research libraries? Should more effort go into the development of local and regional networks with the aim of reducing the burden of interlibrary loan on larger libraries?

September 1982

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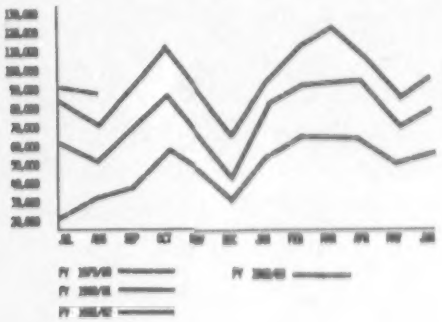
# OCLC Interlibrary Loan Subsystem
## Summary

The Interlibrary Loan Subsystem has been available for slightyly more than three years. It is an online communication mechanism allowing libraries to borrow materials from other libraries. A borrowing library may request a specific item from one to five potential lending libraries. The ILL Subsystem automatically forwards the request, in turn, to each of the selected potential lending libraries until the request is filled. A request remains with a potential lending library for up to four days. Borrowing and lending libraries may update an online record of the request from the time the request is made until the transaction is completed. A message file keeps both borrowing and lending libraries informed of the status of the request.

USAGE

There has been a steady increase in use of the ILL Subsystem. The following graph summarizes the history of ILL Subsystem.



There has also been a steady increase in the number of libraries utilizing the system:

| | | |
|---|---|---|
| July 1979 | 862 | Libraries |
| July 1980 | 1107 | Libraries |
| July 1981 | 1398 | Libraries |
| July 1982 | 1595 | Libraries |

The ILL Subsystem is used by a variety of types of libraries. Requests placed by libraries during fiscal year 1981/82 are divided by library type as follows:

| | |
|---|---|
| Academic Research | 13.3% |
| Academic | 41.6% |
| Public | 24.8% |
| Other* | 20.3% |

(* including state, law, medical, theological and special libraries)

Studies conducted by OCLC on three months of ILL Subsystem transactions indicate a fill rate of 85.6%.

OCLC has continued to make enhancements to the Subsystem. Under development now are enhancements designed to provide libraries with institution-specific statistics and to interface the ILL Subsystem with the Name Address Directory.

Prepared 820903 by:
Kate Nevins
ILL Section
Marketing & User Services Division

## APPENDIX A-3

## INTERLIBRARY LOAN IN THE RESEARCH LIBRARIES GROUP

Barbara Brown
Research Libraries Group

Interlibrary loan is a component of the RLG Shared Resources Program, one of the four principal programs in which RLG members participate. The Shared Resources Program promotes improved access to research materials through mutual agreements governing interlibrary loan, on-site access, and reference service. The backbone of interlibrary loan, of course, is document delivery, which is absolutely essential to support RLG's coordinated collection development activity. Members consider ILL performance—what can be supplied and how quickly—a critical factor in building collection interdependency, one of RLG's primary objectives.

The current policies governing interlibrary loan in RLG are:

1. RLIN ILL Subsystem. Members use the ILL subsystem for transmission of ILL and photocopy requests.

2. Priority Handling. Members respond to requests within three working days.

3. No Charge for ILL and Photocopy. Members do not charge one another for loans or photocopies (of reasonable length).

4. United Parcel Service. UPS is used for delivery of ILL materials; UPS Blue Label (air service) is used when the borrowing library requests it and when items are recalled.

5. Materials In Process. Materials in process (received but not yet cataloged) may be requested on ILL and the holding library makes the material available as it does to its own clientele.

6. Liberal Lending. Members agree to consider ILL requests for traditionally non-circulating items on a case-by-case basis, and they agree to seek alternative solutions for making such material available.

7. Last Resort Suppliers. The New York Public Library and the American Antiquarian Society are libraries of last resort; loan requests are sent to them only when there are no other known locations.

RLG libraries sent each other approximately 34,000 ILL transactions electronically in 1980-81. This grew to an estimated 42,500 in 1981-82; the projection for 1982-83 is in the 55,000-70,000 range. Actual ILL traffic among RLG libraries was higher than the 1980-82 figures indicate, as an unknown number of requests were transmitted via TWX or U.S. mail, especially during April-August 1982 when the Message System could not be used.

To use the RLIN ILL subsystem, the interlibrary loan staff must have access to an RLG Zentec terminal, which operates on a leased telephone line. At present, 22 of the 26 member-owners have dedicated ILL terminals. The others provide access via terminals located in technical processing areas.

On September 1, 1982, the Research Libraries Group implemented a new interlibrary loan system as part of its Research Libraries Information Network (RLIN). The new system replaces the RLG Message System, which members had used since 1980 to transmit loan and photocopy requests. The system includes two major features to facilitate rapid and efficient ILL communication. One is the link to the RLIN central data base. If the title requested is found in RLIN, the bibliographic data, including local call number and location, is transferred by a single command to the ILL subsystem, thus significantly reducing the amount of time required by the borrowing library to process the request.

Second, the borrowing library can identify several potential lenders in the initial request; a negative response from the first automatically forwards the request to the next possible lender.

Another feature of prime importance to the managers of interlibrary loan operations is the detailed monthly statistical report produced for each member library. The report provides a profile for each library as a borrower and as a lender, indicating the number of loans and photocopy requests filled, the number unfilled, the fill rate, the average response time, the average number of lenders tried until the requests were filled, the reasons why requests were not filled, etc. The information is used by the member libraries and the RLG central staff to monitor performance in the network.

The foregoing clearly shows that RLG members now have the optimum combination of an online communications mechanism and a set of policies to support effective document delivery. What has been our experience to date?

There is no question that the United Parcel Service provides a significant improvement in delivery over U.S. parcel post. It does cost more, but the delivery time is much less, more predictable, and the loss rate extremely low. In addition, the material is better protected and more likely to arrive in the same physical condition as it was in when it left. UPS air service almost doubles the per item cost, and for that reason is used only when the borrowing library requests it or when material has been recalled. UPS surface coast-to-coast can take five to seven days; air service reduces this to two or three days. Each RLG library is spending approximately $1760-$7500 annually on ILL UPS delivery, the variation dependent on geographical location and the volume of lending.

But external delivery (library to library) is only one part of the document delivery problem, and probably the easiest to isolate and evaluate in terms of cost and performance. Considerable time can be lost because of problems with intra-campus delivery and movement of requests and materials from the ILL office to the photoduplication service or the shipping room.

A turn-around time study conducted by RLG libraries in February 1982 measured the average number of days from the date a request was sent until the date the material was received by the borrowing library. This average per institution was in a range of seven to 19 days, an unacceptably wide variation in the

opinion of the Public Services Committee, which advises the President of RLG on policy issues that govern the operation of the Shared Resources Program.

A small task force has been charged to review the performance objectives, to consider the problem of conflicting priorities, and to recommend appropriate actions to the Public Services Committee in January. The enhanced statistical capability of the ILL subsystem will provide more accurate data for analysis by the task force and the individual members.

During the first four months of activity (September-December 1982) on the new RLIN ILL subsystem, RLG members maintained a network average response time of approximately four days—response time meaning the elapsed time from the date the request was sent until the date the potental lending library reported its action. During the same period, the network average for actual receipt of the material requested was approximately ten days.

Given those figures, the Public Services Committee confirmed its commitment to the existing response time standard of three days, recognizing that it is within reach.

While RLG members and central staff have done much to improve the receipt and processing of ILL requests and, by using UPS, to reduce transit time for library materials, document delivery remains far from perfect. RLG will continue to seek solutions, through technology and policy, to this challenging problem.

September 1982
Updated February 1983

APPENDIX A-4

## PRIVATE SECTOR, NON-LIBRARY DOCUMENT DELIVERY SERVICES

James L. Wood
Chemical Abstracts Service

Interlibrary loan or interlending as performed by academic, public, governmental, and special libraries constitutes only one segment of the total document delivery activity in the United States and Canada. Document Retrieval Sources and Services for 1981 lists 127 private sector, non-library document delivery services.[1] Of these, 109 are located in the United States and Canada and 18 in 14 other countries.

King Research, Inc. noted in its final report of surveys conducted for the U.S. Copyright Office, Libraries, Publishers and Photocopying, that during 1980 libraries ordered 1,946,100 documents from "commercial" document delivery services.[2] The total number of document copy orders currently being received by such services is undoubtedly in excess of two million per year. When compared with the 2,536,713 loans (originals and photocopies) made by ARL member institutions in 1980-81[3] or the 1,013,581 loan requests handled by OCLC in calendar 1981,[4] it is apparent that the private sector, non-library suppliers have captured a significant share of the total document delivery traffic.

There are two types of private sector, non-library document copy suppliers—those that maintain collections of originals and those that draw upon the collections of others. The first category is exemplified by publishers, abstracting and indexing services (e.g., Chemical Abstracts Service and the Institute for Scientific Information), University Microfilms International, and the Universal Serials & Book Exchange, The second group, and by far the most numerous, are the information-on-demand vendors, e.g., Information on Demand, Find/SVP, and Info-Mart, who acquire copies of needed documents from established libraries. This latter group handles an estimated 70 percent of the requests channeled to private sector, non-library suppliers.

For the private sector, non-library document suppliers, the document delivery business is highly competitive. Not only are these organizations competing with libraries and public sector services (e.g., the Government Printing Office, the National Technical Information Service, the Educational Research Information Center, and the U.S. Patent and Trademark Office), they compete with each other. To assure a market niche, some tailor their services to specific kinds of documents, e.g., government reports and patents, others back up specific bibliographic data bases, while still others provide generalized document delivery services.

The Dialog Information Retrieval Service directory, DIALORDER Suppliers, lists 63 private sector, non-library document delivery services and provides detailed information on the services of each.[5] Most offer customers various options for placing orders, making payments, and specifying the method of actual document or document copy delivery. Most also provide both normal and rush service and attempt to maintain competitive prices while assuring some margin of profit.

Orders are accepted on customers' letterhead and forms, ALA Interlibrary Loan forms, by telephone, TWX or Telex, and various online services, e.g., OCLC, Dialorder, SDC Electronic Maildrop, and Primordial. Some providers levy a surcharge ($.25 to $2.00) for handling electronically delivered requests. Customers may elect to maintain deposit accounts or be billed periodically or for each order. Discounts are frequently offered to deposit account customers as well as to customers who guarantee an agreed upon quantity of orders each year.

Of the 63 private sector, non-library Dialorder suppliers, 85 percent advertise a rush service. Such service carries a surcharge which ranges from $1.00 to twice the charge for normal service. For a ten-page article, the average price for normal service is $12. Generally, this price includes a handling charge, a per page copying charge, the copyright fee, and delivery costs. Thus, the customer frequently does not know the actual cost of the document copy when the order is placed. A few services offer fixed pricing, the only add-on being special shipment costs such as air mail, express mail, or air package delivery.

Customers of the private sector, non-library document delivery services can expect that 85-95 percent of their requests will be filled, and filled within 24-48 hours for rush orders and within three to five days for non-rush orders, exclusive of the time orders and copies are in the mail. A total turnaround time of two days is not unusual when the orders are transmitted electronically and copies shipped via U.S. Postal Service express mail or air courier.

The principal users of the document delivery services offered by the private sector, non-library suppliers are the for-profit special libraries. During 1980, according to King Research, Inc.,[6] these special libraries ordered 1.9 million document copies from the commercial suppliers, During the same period academic libraries ordered only 38,200 and public libraries only 7,100. The total amount of money paid to the commercial suppliers by libraries in 1980 is estimated to have been $3,128,000.

The private sector, non-library document suppliers have captured a significant share of the document delivery market. Their entry into the document delivery business has removed some of the burden from the library community, thereby slowing the rate of increase in numbers of document or document copy requests received by libraries. Because of an ever increasing demand by for-profit special libraries for rapid, reliable sources of document copies and because document delivery can be a profitable venture, the private sector organizations can be expected to continue to increase their share of the overall document delivery business.

September 1982

References: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3. Mandel, Carol A. and Johnson, Mary P. ARL Statistics 1980-81: A Compilation of Statistics from the One Hundred and Thirteen Members of the Association of Research Libraries. Washington, D,C.: Association of Research Libraries, 1981. p. 18.

4. ILL Subsystem Statistical Summary, January-December 1981. Issued monthly by the Online Computer Library Center, Inc., Dublin, Ohio.

5. Dialog Information Retrieval Service. Dialorder Suppliers, Palo Alto, CA: Dialog Information Retrieval Service, June, 1982.

6. McDonald. Libraries, Publishers and Photocopying, p. 2-34.

APPENDIX A-5

# DEVELOPMENT OF A PROTOTYPE SYSTEM FOR RESEARCH INTO ELECTRONIC DOCUMENT STORAGE AND RETRIEVAL AT THE NATIONAL LIBRARY OF MEDICINE: PROGRAM STATUS

George R. Thoma
Lister Hill National Center for Biomedical Communications
National Library of Medicine

The National Library of Medicine has a research program under way to design, develop, and evaluate an experimental system, an engineering prototype that will electronically store, retrieve, and display documents acquired by the Library. The long-term goal of the program is to introduce advanced technology to help the Library fulfill its mission as a national archive for biomedical literature. The experimental system is being developed by integrating various subsystems such as a Document Capture Subsystem, a Document Display Subsystem, high density storage media, and a System Controller. The resulting engineering prototype will enable research in both technical and operational areas.

The Document Capture Subsystem electronically scans paper documents containing textual and graphic material, and digitizes the analog electrical signals generated by the scanning process. Under development are a high resolution scanner that will capture looseleaf documents as well as a bound volume scanner. While at present only two-tone images are being captured, the capability of accommodating gray levels in the future is being built in.

The Document Display Subsystem reproduces retrieved documents at high resolution in both softcopy (electronic display) and hardcopy (paper) forms. Each form has specific advantages. An attractive feature of hardcopy is that it may be retained as a permanent record. On the other hand, an advantage of softcopy is that the electronic screen may be reused for the rapid display of a large number of images, facilitating, for example, browsing by users as well as monitoring for quality control during scanning and storage.

At present, the scanner output is being stored on high density magnetic discs, allowing about a thousand pages of storage, sufficient for experimentation and evaluation. These magnetic discs will eventually serve as a buffer storage to an experimental archival system to be implemented with optical disc technology. Much higher storage densities will be possible with the incorporation of optical discs into the system at a later stage, as well as the development and implementation of compression techniques that will reduce redundancy in the scanner output.

October 1982

APPENDIX A-6

March, 1982 Report LIDS-R-1176

# INVESTIGATIONS OF
# INTERLIBRARY RESOURCE-SHARING NETWORKS

by

J. Francis Reintjes

[Excerpts from the Report]

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ABSTRACT

Investigations of electronic interlibrary resource-sharing networks have been made for the purpose of determining their applicability to library operations and the ability of technology to meet operational and economic requirements. It has been found that electronic networks of libraries are especially suited to the movement of the information content of serials between nodes. Requests involving serials are usually for individual articles which average eight or so pages, a tractable number for document delivery by electronic means. A system configuration is proposed. It consists of an online-computer ordering subsystem and a separate digital document-delivery subsystem. The salient elements of each subsystem are discussed, including the combined index of document holdings, the ordering-system software, document scanner and printers, communication links and requirements for data compression. Also presented is an analysis of the capital-equipment and operating costs for a four-node network with a maximum separation distance between nodes of ten miles and a ten-year projection of total costs. The report concludes with a discussion of advantages of resource-sharing networks to libraries and end users, and barriers to their immediate adoption.

# CHAPTER VII

## SUMMARY

Our investigations have shown that electronic networks of libraries assembled for the purpose of transferring information contained in serials are technologically feasible. Such networks are also economically attractive. A major cost factor resides in the communication links employed between network nodes. Hence, close attention should be paid to this element when networks are being synthesized.

It was clear from the outset uncertainties about the soundness of the concept stemmed from the unavailability of low-cost bound-document scanners. We therefore experimented with scanners to the extent that it was necessary to convince ourselves that they pose no inherent bottleneck. We satisfied ourselves there is not, but there is room for much more research on those devices. Such research should be aimed at improvements in resolution quality, refinements in the method used to support documents, automatic circuitry for setting voltage-threshold level in the analog-to-digital conversion part of the scanner and in alternative optical/mechanical configurations that would yield compact scanners.

We believe a resolution goal for bound-document scanners should be of the order of 300 lines per inch. In light of steady advancements being made in solid-state sensors such as charged-coupled and similar devices, attainment of this goal should be possible in the near future, say, in two or so years from how. It is less certain that a low-cost digital printing device that matches this resolution will be available, however, although there is evidence that a low-cost laser printer with a 300-line-per-inch resolution capability is nearing the final stages of development.

Our research has led us to the conclusion that the design of an electronic library network should be approached on a total system basis. To take full advantage of the available technology, they should perform both a document-ordering and a doument-delivery function. Since many tradeoffs are possible, each network should be treated uniquely, and specifications should

take into account factors such as anticipated volume of traffic within the network, distances between network nodes, number of nodes and the amount and kinds of materials to be handled. Each of these items will influence the detailed design of the network.

The choice of communication links for the document-delivery part of the network is crucial. Communication impacts upon traffic capacity, system complexity and operating cost. It will be the factor that will largely determine the geographic extent of the network, especially where minimization of cost is a prime consideration.

Electronic networks of libraries are suitable for intra-organizational as well as inter-organizational connections. In fact, it could well turn out that their first usage will be to electrically couple the various branches of an intra-organizational library system -- the library complex of a university, for example, or the branches of a municipal library system. We envision that such networks will provide wholly new opportunities for libraries in their dealing with serials through their ability to upgrade the quality of end-user service and to make fine-grain measurements of document usage.

Finally, we point to barriers that must be overcome in order for electronic networks to come into existence within the library community. One is that the library community must be convinced, before making an investment, that such networks can be made to work reliably and that the quality of end-user service they render will not only be uninhibited but actually enchanced. Another is that the industrial sector is unlikely to invest its own resources to make complete systems available on a "turn-key" basis unless a foreseeable market exists. Either subsidized demonstration experiments will be needed to break the deadlock, or high-risk capital must come into play.

## A LOOK TO THE FUTURE

Impending advanced digital technologies such as very large-scale integrated circuitry (VLSI) and mass, archival, optical-disk storage devices will eventually offer opportunities for drastic changes in the

way we publish, store and retrieve information. Direct digital-electronic publishing and storage of new knowledge will become possible as soon as these technologies are perfected. Whether knowledge already recorded in printed form will be converted to the digital domain, or whether we shall have to contend with a dual-mode environment until printed documents fade into history and disuse is a moot question. In a two-mode environment one can conceive of digital mass storage as an add-on feature to the document-delivery concept discussed in this report. Refer to Fig. VII-1. Here an option is provided to deliver materials either by scanning printed material or retrieving them from a mass digital store. The complexity of such a system depends on the degree of compatibility that is built into the combined system. The techniques employed in each mode for handling graphics, data-compression and decompression and data transmission may well determine whether an integrated system will be possible or separate delivery systems will be necessary.

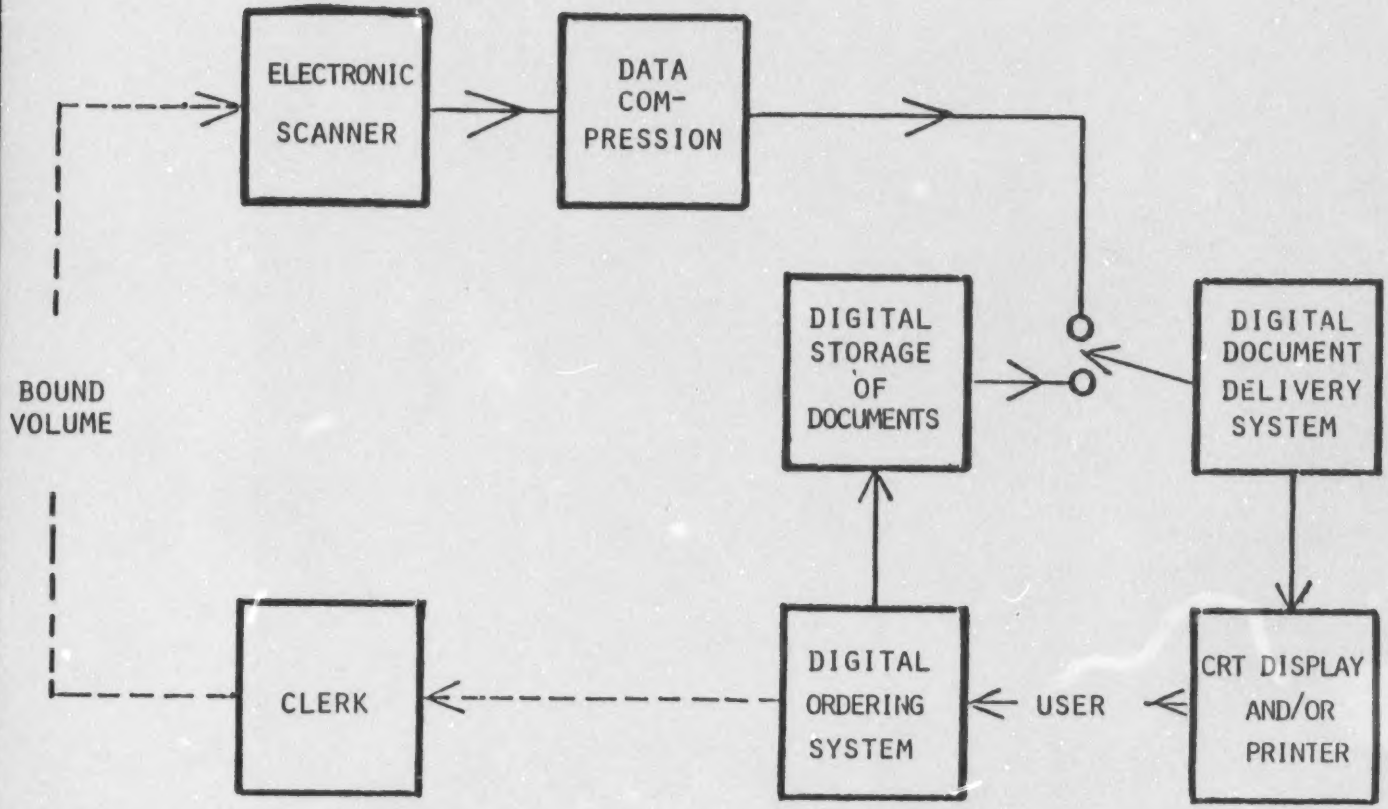


Fig. VII-1. A possible configuration for a future electronic ordering and delivery system.

# ADONIS T.M.

PRELIMINARY DRAFT

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ADONIS is the name for a proposed electronic document delivery project which will use advanced technology to store and retrieve individual articles or pages from scientific, technical and medical (STM) literature as part of a global service. The ADONIS project is sponsored by an international group of publishers.

The aim is an electronic form of document supply from 1984.

(NOTE: On September 20, 1982, the Members of the sponsoring consortium met in London and decided to proceed with the ADONIS project as proposed in this brochure)

ADONIS[T.M.] is the trademark/service mark chosen by the sponsors to designate the project.

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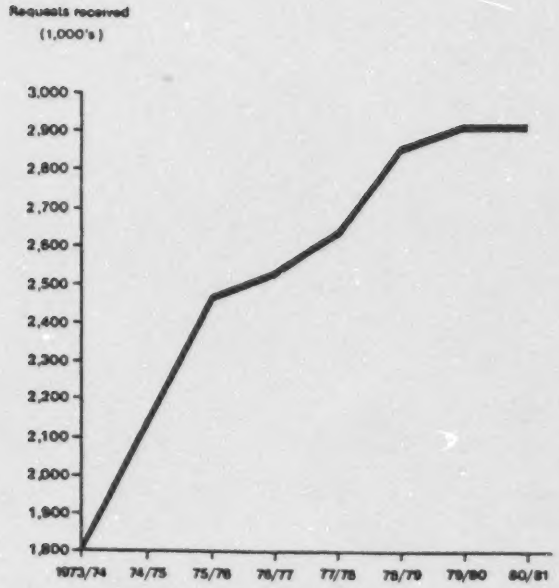



Figure 1
Total interlibrary loan demand

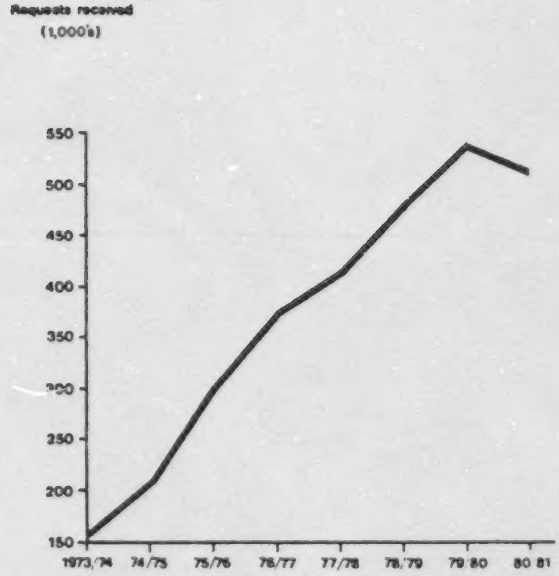



Figure 2
Overseas demand

(Reproduced by permission from Interlending Review, 1981, 9, (3), 75-76)

Adoption of New Technology

The ADONIS project team has reviewed a range of technological options which could be adopted by all publishers to supply individual articles at a quality as good as present xerographic standards and has decided on a system with the following characteristics:

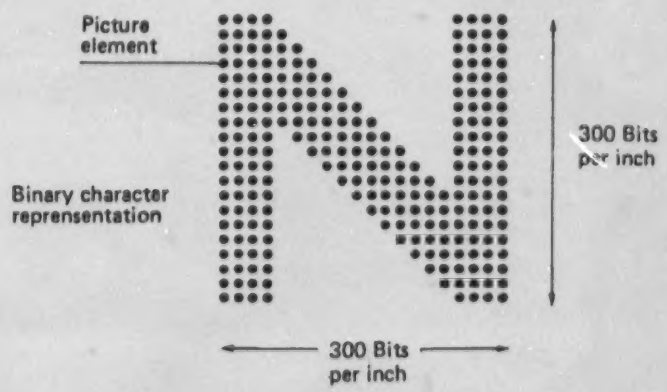
1) a high resolution scanner capable of producing a digital representation of the document;

2) a low-cost, high-capacity archival digital store;

3) a high resolution printer, capable of printing from such digital input;

4) a mini-computer to control data storage and transfer.

Digitalization has been chosen so as to record not only normal text but also halftone illustrations and any special characters in the text such as mathematical signs and non Roman-alphabets. Each character or other printed image will be scanned using laser techniques 300 times per inch to give a digital representation consisting of picture elements at a density of 300 per inch in both vertical and horizontal directions. This is shown diagrammatically below.



User Requirements for Document Delivery

There are indications that the present system of providing single journal articles on demand could seriously inhibit the rapid and continuing flow of scholarly information by failing to satisfy the growing needs of libraries and individuals.

One reason is the sheer growth in demand for single journal articles, as shown in the graphs opposite. This has been fuelled in recent years by two major developments:

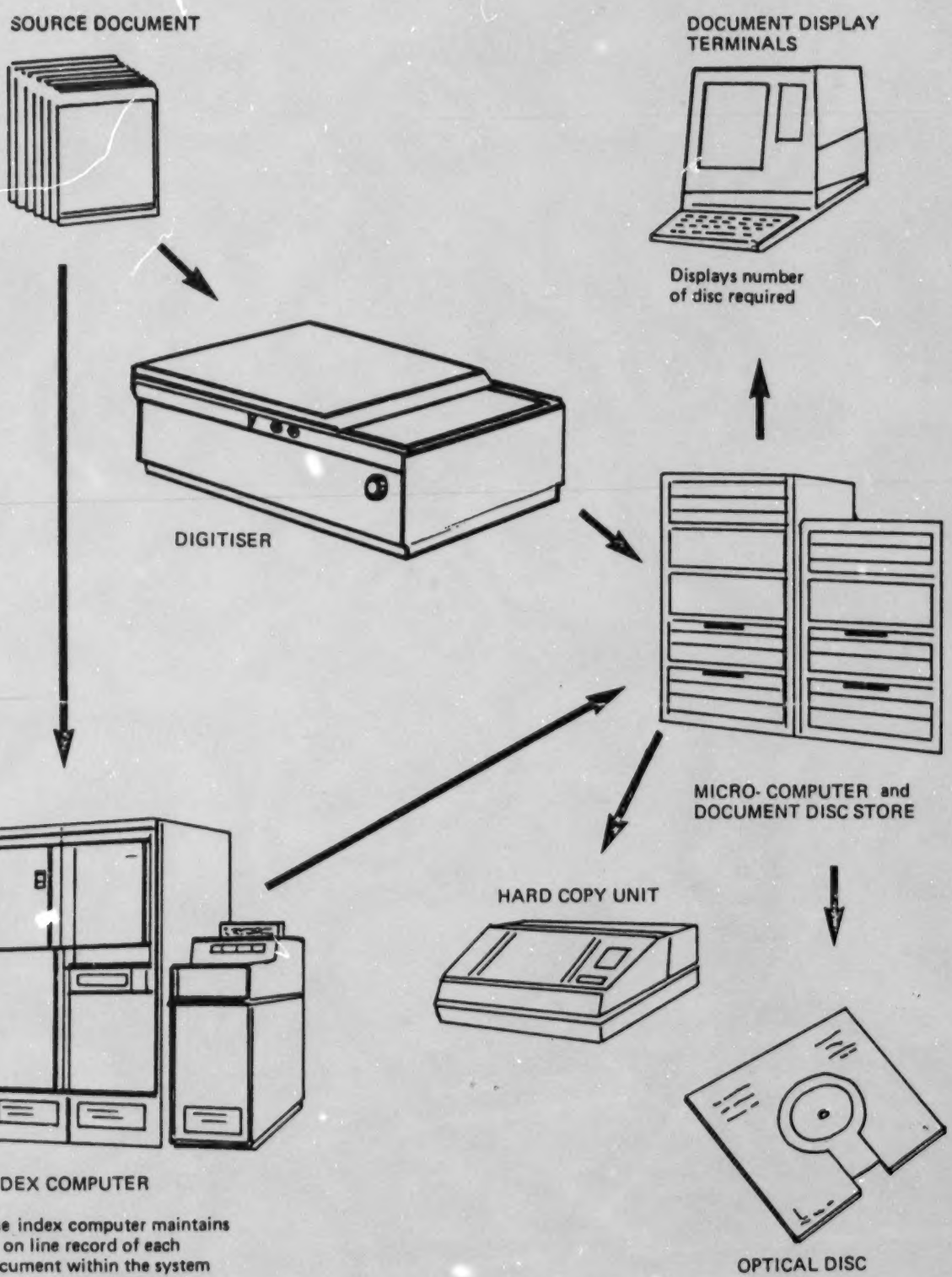
i) the decreasing ability of libraries to maintain a full archival service (for both books and journals) in the face of falling budgets; and

ii) more searching of remote comprehensive databases for bibliographic citations. Many of the articles highlighted cannot be supplied from the local library resources.

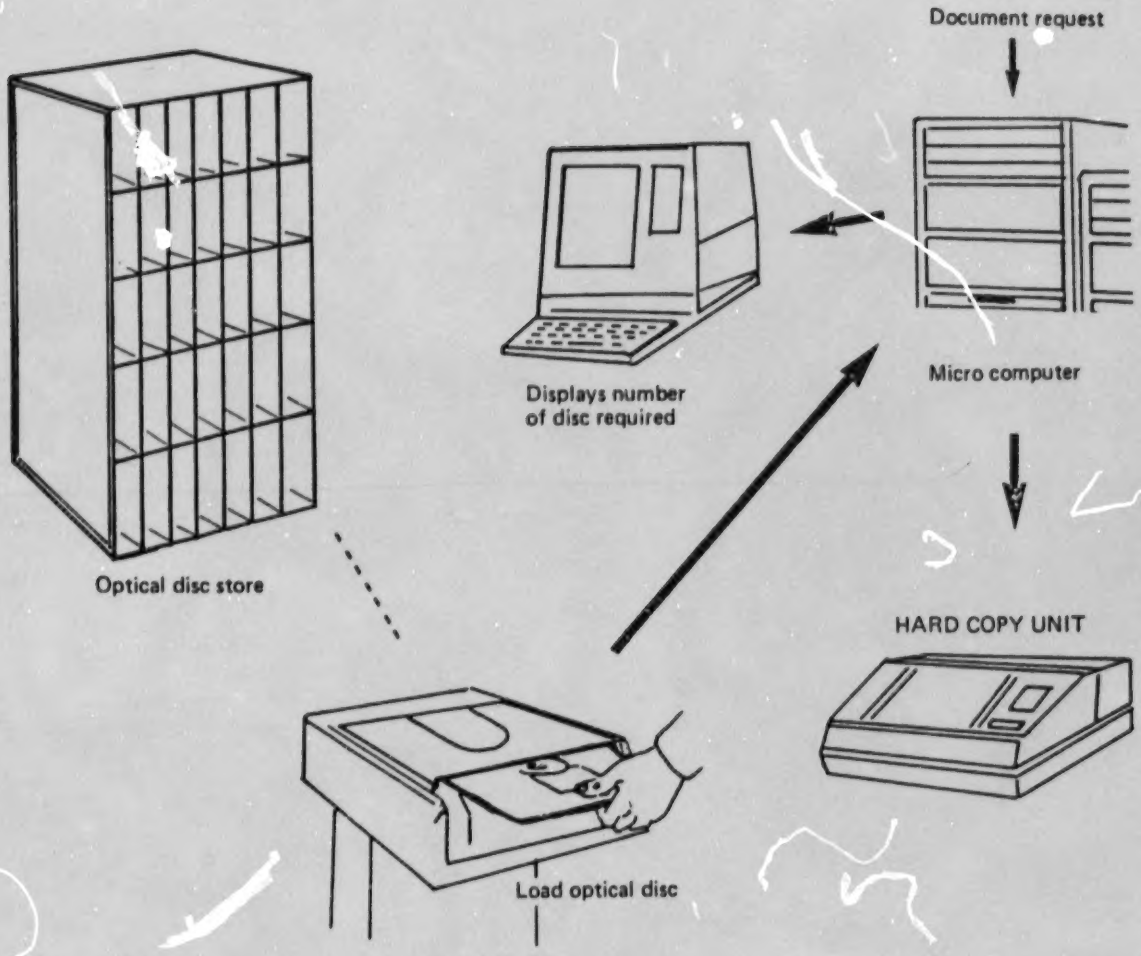
Interlibrary loan systems are labour intensive and rely little on computer technology. Thus, the cost of existing document delivery services grows with increases in labour costs, thereby imposing a further strain on library resources. This is true for both large and small document delivery centres.

Libraries are becoming more involved in information (as opposed to document) delivery, as part of their desire to service their users. Computers are used extensively to locate relevant information and it is logical to see to what extent new technology can assist in developing a comprehensive, cost effective document delivery service.

The traditional relationship between the library and the publisher is changing under the influence of technological developments, requiring the establishment of closer links between author, publisher, library and user.


SOURCE DOCUMENT
DOCUMENT DISPLAY TERMINALS
Displays number of disc required
DIGITISER
MICRO- COMPUTER and DOCUMENT DISC STORE
HARD COPY UNIT
INDEX COMPUTER
The index computer maintains an on line record of each document within the system and provides an efficient means of searching for all documents
OPTICAL DISC

ADONIS$^{T.M.}$ database creation system.




A typical small ADONIS T.M. output system.

Larger systems may include faster or multiple printers, multiple optical disc readers and "juke box optical disc stores" providing automatic loading of the required optical disc. The document may be printed remotely after data transmission.

## Market and The Publisher Interest

### Market

An investigation undertaken in April/May 1980 by the British Library and Elsevier showed the increasing demand for single articles in the commerical STM area, and particularly in the life sciences, when compared with an earlier 1975 study. While the results of this evaluation represented a 'snap shot' view of a dynamic database, and various assumptions had to be made about the seasonal and international validity of the sample, nevertheless the results of this and other studies, in both the US and Europe, established that there is a large and increasing market for individual articles.

### The Publisher Interest

The availability of new technology has stimulated a group of STM publishers to investigate the possibility of an automated document fulfillment service which would replace part of the existing photocopying done within libraries.

Although a small group of publishers has taken the initiative, the aim is to include all STM journal publishers who wish to participate. A one-stop shopping centre for document requests is highly desirable for librarians and users and will be achieved only by publisher cooperation in developing the database.

Initial contacts with other significant journal publishers received favourable response. Thus, there is a strong likelihood that their publications will be included in the ADONIS system.

The ADONIS system seeks to provide maximum flexibility for the location and capacity of output centres. For medium to large sized document delivery centres the information could be provided on optical discs while smaller centres may well receive the data via wide band communication links. The centres will be serviced by a database creation centre which will convert the journal pages into images stored in compressed form and create the index of bibliographic details which will be used to identify the pages to be printed out for document requests.

The ADONIS system will be designed to take advantage of future developments in equipment and telecommunication technology. This will increase its application to other areas, eg. for on-demand printing or electronic publishing of single journal issues or books, to replace archival storage of bound documents within libraries, and for other uses in non-library or information fields.

## Collaboration with Libraries

The library network is an extensive and developed system for document delivery. Any arragements to interface Adonis with this network could be mutually beneficial to both libraries and publishers.

The ADONIS concept is international and, as well as the British Library, other article supplying libraries and services in Europe, North America and Japan have expressed interest.

Such collaboration would:

i) draw upon the respective expertise of publishers, libraries and document delivery services.

ii) provide a basis for the joint development of new services for the user community, including archival facilities for books;

iii) offer the prospect of minimizing costs for document delivery; and

iv) provide an equitable system of separates publishing and distribution, free from any doubts about copyright by providing copyright usage fees determined by each participating publisher.

Further information will be provided periodically. Interested publishers, libraries and document fulfillment services are invited to contact the ADONIS project Secretary, B T Stern at Elsevier Science Publishers, P.O. Box 2400, 1000 CK Amsterdam, The Netherlands. (Telephone Amsterdam 5803-609. Telex 18582 ESPA NL).

APPENDIX A-8

# INTERLIBRARY DOCUMENT DELIVERY: THE OPTIONS*

Richard W. Boss and Judy McQueen
Information Systems Consultants Inc.

The major barrier to effective and efficient interlibrary lending is not the complexity of verifying the bibliographic details of a citation, the intricacy of accessing files of millions of citations to identify a holding location for the wanted item, the potential for administrative and personal suspicion aimed at outsiders wishing to tap an institution's resources, the communication of the loan request from one institution to another, nor the time and cost of processing the request; but the apparently simple process of physically moving the item to be loaned from point A to point B.

The document delivery problem appears to affect all interlibrary loan movements, irrespective of the location, distance, or type of material involved in the transaction. In relation to location, the problem is felt as acutely in the Northeast as in the Far West, although the former enjoys advantages of population concentration which make cooperative delivery solutions more feasible. Despite an expectation that distance is a significant factor in delivery costs and thus a prime contributor to the document delivery deadlock impeding effective interlibrary lending, the dilemma is as pressing for libraries in Manhattan wishing to share their resources as for those in Arizona involved in loans with Oregon or Alaska. While there is some evidence to suggest that the movement of an average 22-page journal article is slightly more timely than that of a much bulkier monograph, current interlibrary lending practices do not achieve significantly better delivery times for periodical material.

The problem is clear: how to achieve the efficient delivery of interlibrary loan materials within the dual but opposing constraints of economy and timeliness? Given the current state of information technology, three delivery mechanisms warrant consideration: Express Mail, commercial courier services, and telefacsimile.

Of the various "overnight" delivery services, the Express Mail system operated by the U.S. Postal Service is the least expensive, offering "next day" delivery at $9.35 for a two-pound package—the equivalent of an average size monograph. Even if cost were no object, Express Mail would not offer a perfect solution to the document delivery problem as items have to be lodged at certified Express Mail dispatch points and the service is not offered to many destinations, including university centers such as Fairbanks, Alaska; Pullman, Washington; and Iowa City, Iowa.

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*This paper was derived from a report prepared by Information Systems Consultants Inc., of Bethesda, MD, for the Western Council of State Libraries. The authors have conducted telefacsimile studies for major international corporations, a law library network, and several other clients. They are preparing a Library Technology Report on the subject for publication in early 1983.

Other postal service options are less expensive, but slower. A photocopy of an average 22-page journal article (6 ounces) may be sent by First Class Mail for a cost of $1.05 with an expected delivery schedule of three days over a distance such as that between Tucson, Arizona, and Eugene, Oregon. A two-pound Priority Mail package would cost $2.88 over the same distance. The use of library rate is economically attractive—$.32 for the first pound and $.11 for each additional pound up to seven pounds—with a non-distance-dependent pricing schedule—but a disaster time wise, with postal officials quoting 10 to 12 days or more for a distance as short as 1000 miles and, because of the surface nature of the transaction, considerably longer for destinations not within the contiguous United States.

As the majority of interlibrary loans are made from within a local area, it could be argued that the quoted postal prices and delivery schedules should be adjusted to reflect localized pattern. No adjustment is required for Express Mail and the decrease to $2.54 for Priority Mail does not significantly affect cost patterns—and this approach does not take into account common prejudices about the local delivery performance of the U.S. Postal Service.

Where population densities, interlibrary loan transaction volumes, and appropriate sources of funding permit, the establishment of local or regional cooperative courier services dedicated to the movement of library materials provides an attractive document delivery mechanism. The cost of such an arrangement needs to be established individually for each locality, and estimates should include overheads such as driver benefits and backup, vehicle depreciation and insurance, as well as the more commonly considered costs of driver salaries, vehicle purchase, and fuel expenses. When establishing local courier services it is advisable to build in scheduled meeting or pick-up points for services covering contiguous areas or else libraries near one another may be virtually unable to interact through the accident of being in different courier networks. In assessing the costs of this mode of document delivery relative to others, a clearer picture will be obtained by allocating total expenses on a per item moved basis rather than by assessing the cost per participating institution. The experience of state-wide systems varies widely, but few are able to deliver documents for less than $2.50 an item. Delivery time is normally three days or more. When more than one route is necessary within a state the delivery time is usually five or more days.

Commercial courier services which offer overnight delivery are normally quite expensive, with rates averaging more than double Express Mail. United Parcel Service, however, a surface carrier with varying rates around the country, charges approximately $1.25-2.50 for a journal article or monograph delivered within 400 miles. Most deliveries are completed the next day. There is a pick-up charge of $2.75 only the first time in a workweek the courier comes to the library. This fee can be reduced to as little as $1 per week per library if a group contracts with UPS. United Parcel Service would, therefore, be the lowest cost service offering rapid delivery within a distance of 400 miles. For greater distances the cost remains low, but delivery time stretches to three to five days.

Worthy of consideration for the delivery of discrete documents such as photocopies of journal articles and excerpts from monographs, digital telefacsimile equipment is becoming increasingly popular as a means of transmitting hard-copy documents rapidly, by-passing the delays of regular mail or the costs of commercial courier services when distances of more than 400 miles are involved. While there

were only 255,000 telefacsimile machines installed in North America in 1980, 48,600 units were delivered during 1981.

Telefacsimile has had a relatively poor reputation in the library community because most libraries' experience has been with analog machines which transmit slowly—between two and six minutes per page—and with relatively poor image resolution. New, fast, high-resolution digital telefacsimile equipment capable of transmitting a regular typed-page in 15-60 seconds reduces the telecommunications costs of the medium while offering better quality output.

Using digital equipment with a speed of 30 seconds per page, a 50-page transmission from Tucson, Arizona to Fairbanks, Alaska could be accomplished for telecommunications costs of less than $10.00, compared with a charge of $113 if using a six minute per page analog machine. The resolution is comparable to that of a regular photocopy, while that of an analog transmission is poor, similar to that of a television image. Express Mail is not available between these points. Federal Express offers two-day service for a fee of $59; United Parcel Service does not serve Fairbanks.

Digital telefacsimile machines usually cost from $6,000 to $12,000 each (rental $250 to $500 per month) as compared with analog machines at $2,000 each (rental approximately $90 per month). Higher equipment cost can be offset, however, by the reduction in telecommunications cost realized by using the higher speed digital devices.

Assuming that a digital machine can be rented for $500 per month and that the daytime line cost for a 2,500 mile transmission is $.54 for the first minute and $.38 for each additional minute, the transmission of 100 pages each month using a digital machine would cost $554 for the month ($5.54 per page). The picture changes dramatically if 1000 pages are transmitted. The cost of the transmission becomes $1,040 for the month ($1.04 per page). For a distance of 500 miles the cost may be as low as $.30 per page or $3.00 for a ten-page article.

Copy resolution is determined by the number of lines per inch (lpi) measured vertically. Copies are legible at 64 lpi. Most analog machines offer this degree of resolution. Digital machines usually offer resolutions of 67, 100, and 200 lpi; often described as high-speed, standard and detail modes respectively. Many digital machines operate at 9,600 lpi. Automatic stepdown or modem shift-down, available on some digital machines, allows the rate of transmission to be reduced from 9,600 to 7,200 to 4,800 to 2,400 lpi to improve copy quality even further—usually to compensate for transmission line problems—and to adjust to other equipment which operates at lower baud rates.

Telefacsimile machines are normally described not only in terms of transmission time and resolution, but also in terms of volume. A low-volume machine is one which is expected to be used to transmit fewer than 500 pages per month; a medium-range machine would be for 500 to 1,000 pages per month; and a high-volume machine for more than 1,000 pages per month.

All telefacsimile machines accept only single sheet feed—typed, printed, or photocopied pages. In interlibrary loan applications the requested material has to be photocopied before being transmitted. [However, this is already the case in most

journal article loans irrespective of the delivery method.] Many fax machines have automatic feeding devices which will accept up to 40 or 50 sheets for dispatch. Machines so equipped need not be attended while transmitting single sheet documents. Automatic dialers make it possible to schedule transmissions for periods of lowest telecommunication rates or for times when staff are not available to start the process. The higher price machines offer a delivery verification feature so that the transmitting unit knows that the receiving unit has actually printed the copy.

Most telefacsimile machines use roll paper in the receiving unit. It is usually 8.5 to 11 inches in width, but the maximum length of a single page can vary significantly from machine to machine. Two types of printers are used: thermal and electrostatic. The former requires special treated paper and the latter uses plain paper of the type now used in most medium- to high-volume office copyiers.

Virtually all telefacsimile machines can transmit via voice grade unconditioned telephone lines—dial-up or leased. The digital machines can also transmit via digital lines or broadband media such as microwave, satellite, coaxial cable, or fiber optic cable. Compatibility among digital machines of different manufacturers can normally be achieved by stipulating that all equipment conform to the international standard of the Consultative Committee on International Telephone and Telegraph (CCITT) for Group III digital equipment—all analog machines are in Group I or II. If the digital machines are required to be compatible with analog equipment, downward compatibility to Group I and/or II equipment, must be specified. When digital and analog machines are interfaced, the transmission is conducted at analog speeds and capacities.

There are at least 15 suppliers of telefacsimile equipment in the United States, but only three offer at least five different pieces of equipment: Rapicom, 3M, and Xerox. The availability of an extensive equipment line from a single vendor means a network of machines with different characteristics could be assembled to meet the requirements of various participants without having to use more than one source. By buying from a single manufacturer, quantity discounts and special service agreements may be negotiated and compatibility problems can be minimized. One company without a complete equipment line should be mentioned. Although Telautograph offers only two machines, its digital machine was top-rated in a recent evaluation by the publishers of "What to Buy for Business."

If libraries decide to procure telefacsimile equipment to facilitate interlibrary document delivery, it would be advisable to:

a) set a time standard of no more than 60 seconds for a transmission of normal copies, using the slower high-definition mode only for some older published materials which may require greater resolution.

In an era of rapidly rising local telecommunications costs, the time telephone lines are used should be minimized. No machine should be considered which transmits at less than one page in 60 seconds because the $4,000 or more saved initially will soon be paid out in high telecommunications charges.

b) specify digital (CCITT Group III) telefacsimile equipment.

Specifying Group III equipment assures fast transmission. The CCITT standard

for Group I is one page in six minutes, for Group II one page in three minutes, but for Group III it is one page in 30 seconds. The digital machines also offer better resolution, usually up to 200 lpi. While this is not necessary for the transmission of typewritten pages or most recently published material, is imperative if complex charts and copies of older published materials are to be sent. The reason that older published materials often require adjustment in telefacsimile resolution is that typeset letters are often quite close together and the discoloration and shrinkage in book papers that normally occurs over time can render a transmitted image unreadable.

c) select equipment which uses the electrostatic rather than the thermal copying method.

Thermal papers have almost completely disappeared from photocopying equipment because the paper is light and heat sensitive and can change color to such an extent that the image becomes illegible. Office equipment studies have demonstrated that users react negatively to papers which look and feel different from the plain bond to which they are accustomed. In introducing a new technology, care should be taken not to substitute unnecessarily for that which has become familiar.

d) if seeking to establish a library telefacsimile network, select a single line of equipment from a company which can offer models ranging from low to high volume.

A library telefacsimile network may begin at a low-volume, but could rapidly outgrow the equipment initially procured.

e) select equipment which is downward compatible.

The digital equipment should be ordered with the ability to downshift to lower baud rates to permit communication with organizations which have older equipment. The equipment should be able to address analog machines in at least Group II. Since the ability to address Group I equipment is dependent on the line of equipment chosen, libraries should seek to ascertain the type of equipment held by libraries outside their area with which they expect to communicate most frequently.

f) equipment should be leased or rented, rather than purchased.

The telefacsimile market is undergoing rapid change. Even though most of the digital machines (CCITT Group III) have been introduced within the past three years, a fourth generation of equipment is under development. The new machines are expected to be capable of transmission rates of 56,000 lpi and higher with greater resolution than now available. The new generation machines will call for satellite, microwave, or coaxial cable transmission. Standard development for the planned CCITT Group IV machines has not yet been completed.

There is also evidence that a number of photocopier manufacturers are experimenting with the introduction of copying machines with telefacsimile capability. The machines could be used for conventional copying when not in use for telefacsimile transmission. This could eliminate the need to purchase separate equipment.

In conclusion, the mode of document delivery which best satisfies the criteria of economy and timeliness for distances of less than 400 miles is the commercial surface courier UPS. For distances over 1,500 miles, Express Mail is normally the lowest cost rapid delivery system to the communities which it serves. UPS is lower in cost but slow than Express Mail, requiring up to five days. Digital telefacsimile is potentially lower in cost than Express Mail for short articles or excerpts of ten pages or less if monthly volumes of more than 1,000 pages per machine are maintained. It is the lowest cost rapid delivery method available to thousands of communities which have no Express Mail or commercial courier service.

Any plan to improve document delivery should incorporate several modes depending on the number of pages, distance, and urgency of delivery. It could be desirable to construct a series of cross-over graphs to show when one mode is more cost effective than another.

October 1982

APPENDIX B-1

# SOME ECONOMIC AND DEMOGRAPHIC REALITIES FACING LIBRARY EDUCATION—AN EXPRESSION OF PERSONAL CONCERNS

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In addressing issues in library education today, one may choose from a score or more. I shall discuss two, which I have designated "economic and demographic realities." These two issues are intertwined, and both pertain to an overriding issue for a number of library schools, survival.

I must begin with a confession. Portions of my remarks here have been taken from an informal presentation that I made during a meeting of the Law Libraries Association last June 15 as well as from a paper prepared for the June 28-30, 1982, conference at Wye Plantation sponsored by the Council on Library Resources. Happily, because ARL members have been invited to read these observations rather than listen to them, skipping paragraphs they may have heard before should be a simple matter.

Today there are 69 North American library schools (62 in the United States and seven in Canada) whose programs leading to the first professional degree are accredited by the American Library Association. Of the 62 programs in the U.S., it may be noted in passing, three presently have conditional accreditation, a status that can extend for only two years before a school either succeeds in convincing the ALA's Committee on Accreditation that it is again deserving of full accreditation or loses it completely. During 1981, one program (that of Alabama A & M University) was removed from the accredited list while another was added (the University of Mississippi). Thus far in 1982, another school has been added to the list, that at the University of North Carolina at Greensboro, while one has been dropped (Emporia State University). There are six or eight presently unaccredited programs working toward accreditation.

Librarians, including library educators, generally agree that, for the United States today, 62 library schools are too many. It is also agreed that five years from now there will surely be fewer library schools on the accredited list. There is not agreement, however, on which library schools should survive and which should be eliminated.

In 1962 there were but 31 accredited library education program in the U.S., exactly half the present number. (Note my careful use of the term "accredited program" rather than "accredited school" for the reason that the American Library Association is empowered by the Council on Postsecondary Accreditation to accredit only programs leading to the first professional degree, i.e., the master's degree. Undergraduate programs, doctoral programs, continuing education programs, etc., cannot be evaluated for accreditation purposes by the ALA.)

While, during the 20 years between 1962 and 1982, the number of accredited programs in the U.S. has doubled, from 31 to 62, in Canada the number has grown from two to seven.

Libraries in the U.S. experienced dramatic growth during the 1960s, as we all recall, and librarians were suddenly in great demand. President Johnson's "Great Society" legislation not only contributed indirectly to the growth of library education through federal aid to libraries, but directly through Title II-B of the Higher Education Act of 1965. Fellowships at both the master's and doctoral level, along with funding for research and continuing education, became available in numbers and amounts never known before in American library education. The institutional support accompanying the fellowships not only spurred existing schools to expand, but encouraged the creation of new library schools as well.

Although the Title II-B program still survives today, despite recommendations of zero funding by Presidents Nixon, Ford, Carter, and Reagan, it is but a shadow of its former self in terms of available dollars. Whereas my own school's grant in 1969-70 was $255,524 (the high-water mark under this legislation), our grant for the current year is only $40,000. Between 1966 and 1982 (17 years), Michigan's total funding under Title II-B has been $1,575,428. Roughly half of this has been used for fellowships; the rest has been in the form of institutional support.

It is generally agreed that the 62 ALA-accredited programs in library education today are distributed across the United States in a less than ideal fashion. While California, the most populous state, has four accredited programs, New York has no fewer than nine. Eighteen states are not represented at all on the accredited list (Alaska, Arkansas, Delaware, Idaho, Kansas, Maine, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Dakota, Oregon, South Dakota, Vermont, Virginia, West Virginia, and Wyoming.) Of the three accredited programs in Texas, two are located in one town, Denton. The programs at Queens College and St. John's University in New York are but two miles apart. The two library schools in Ohio, Case Western Reserve and Kent State, are but 35 miles apart, and both are in the far north-east corner of the state.

It is apparent to most of us that, in relationship to the employment picture since about 1974 and the probable job situation during the remainder of the 1980s, the number of accredited programs in the U.S. in 1962 (31) would be more appropriate for our present needs than is the number that we have (62). The total FTE enrollment in master's programs among the 63 U.S. schools on the accredited list in the fall term 1981 was 4,970. Were the number of accredited programs today what it was in 1962, that would mean an average FTE master's enrollment of 160 per school, a by no means unreasonable number. Even when students in doctoral programs and sixth-year certificate programs are added, the total is still modest when compared to the size of most other professional schools in most universities.

For most library schools, the peak in enrollment occurred between 1971 and 1974. Although it was increasingly apparent at that time that the great shortage of librarians was largely past, there was a time lag in this realization that kept the students coming. Among the 53 U.S. library schools on the accredited list in the fall of 1973, there were just over 11,000 students working toward the master's degree. One hundred and fifty others were registered as post-master's students, most of whom were seeking the Sixth Year or Advanced Certificate, while an additional 300 were enrolled in doctoral programs. It must be kept in mind, of course, that many of these students were enrolled only part time, so the number of graduates per year was considerably less than this total enrollment in a one-year program might suggest. In 1973-74, these 53 schools conferred a total of 6,893 degrees, of which

6,804 were master's. This was an average of 130 graduates per school per year.

Of the 53 schools with ALA accredited programs in 1973-74, all remain in operation today except one, that at the University of Oregon. That program was discontinued for fiscal reasons in 1978. The program at Emporia State University, which was removed from the accredited list last July, still exists, of course, and students enrolled at the time its accreditation was removed (July 1982) will still be considered graduates of an accredited program under the rules of the Committee on Accreditation. Furthermore, there are no plans at Emporia for the library school to close—with the full support of the university's president and governing board, the school is determined to regain its accreditation within two years.

Among the 52 schools whose accreditation dates back at least ten years, a total of 4,193 degrees were conferred in 1980-81, the most recent year for which we have degree data, of which 4,030 were master's. (Ninety-eight were advanced certificates and 65 were doctorates.) Compared to the 6,804 master's degrees conferred by these same schools in 1973-74, this represents a decrease of 2,774, or nearly 41 percent. The average number of degrees conferred by each of these 52 schools was 81 in 1980-81 compared to 130 in 1973-74.

We must keep in mind, of course, that in addition to these 52 U.S. schools (including Emporia) whose accreditation dates back to at least 1973, there are 11 others that have been added to the accredited list since 1973. These 11 schools conferred a total of 456 master's degrees in 1980-81, plus seven advanced certificates, for an average of 42 degrees per school. Note that the current average for these newer schools is about half that of the older schools.

The 41 percent reduction in degrees awarded by the group of older schools is not, of course, evenly distributed among them. Three of the 52 have actually experienced an increase since 1973-74—one, Kent State University, by a whopping 166 percent—from 44 graduates in 1973-74 to 117 in 1981-82. (The other two, the University of Arizona and Texas Woman's University, increased by 16 and 38 percent respectively.) Each of the remaining schools, however, has experienced a decrease, ranging from a mere one percent to a devastating 82 percent. Thirteen schools have had reductions of 50 percent or higher during this seven-year period.

Among the 62 U.S. schools on the accredited list today, there were nine that had 30 or fewer graduates during 1980-81, while only 16 graduated 100 or more. Although there may be a few institutions of higher education where declining enrollment in a given academic unit does not have an eventual effect on the financial support provided to that unit, this is certainly not the usual pattern. While presidents and vice-presidents for academic affairs recognize that enrollment may fluctuate and are often willing to tolerate a decline with the expectation that the trend will be reversed in due course, continuous shrinkage is bound, eventually, to suggest a reduction in faculty and staff support.

A striking example of this kind of decision making has been provided very recently at the State University of New York at Geneseo. In a news release dated July 30, 1982, it was announced that "the School of Library and Information Science at the State University College at Geneseo will close in August, 1983, ending a tradition of library education at the college which dates back three-quarters of a century." Geneseo is, of course, one of the library schools included in the 31 schools

mentioned above as having been on the accredited list as early as 1962. In fact, it was first accredited by ALA in 1946 and, ironically, was again reaccredited only last January (to the year 1988).

The reason for this drastic action at Geneseo, which includes the dismissal, with one year's notice, of eight faculty members, was stated tersely by President Jakubauskas: "This is a programmatic decision. The Library School is a graduate program with declining enrollments and there are undergraduate programs at the college with growing enrollments." Because the school's closure represents "retrenchment," a principle recognized in the faculty's union contract, tenure was not an issue in the faculty dismissals (with one year's notice) even though five of the eight individuals held tenure.

Just as the number of students has declined in most library schools, so has the number of faculty. In 1973-74 the average number of full-time faculty per school was 11.66; in 1981-82, it was 10.23, or a decrease of 1.43 faculty FTE over nine years. Note that thus far, faculty size in most schools has not decreased at the same rate as enrollment.

While library school faculties have always been small compared to those of other academic units on a given campus, there is, nevertheless, a minimum below which they cannot go and still provide students with adequate preparation for a library career, regardless of how few students there may be. In over one-half of the library schools on the ALA accredited list today, including the seven Canadian schools, the full-time faculty, including the dean or director, numbers nine or fewer.

Small faculties and small student bodies raise the issue of "critical mass," a topic on which Herbert S. White, dean of Indiana University's School of Library and Information Sciences, has written more than once. At an open meeting of the Committee on Accreditation during the Philadelphia Conference of ALA in July 1982 he noted: "The term 'critical mass' is best known to us from the physical sciences. It is the minimum mass of a substance necessary for an expected reaction to take place. Below that level of mass, nothing happens. Presumably, the thing just sits there."

Dean White has asked: "Is there a point in terms of faculty size, student enrollment, and institutional support below which the offering of the necessary diversity in library education becomes impossible?" The answer to Dean White's question must surely be in the affirmative, but what these minimum figures should be has not been agreed upon; they probably cannot be agreed upon.

In his remarks at the COA open meeting, Dean White observed: ". . . there must be enough faculty so that every needed aspect of library education has at least one knowledgeable up-to-date involved faculty member who reads, writes, and participates in that area . . . However, for the intellectual climate of a university one faculty member is not enough, any more than I can have a tennis match all by myself. Research and intellectual growth are largely collaborative processes. . ."

Just as the "collaborative process" is essential for faculty research and intellectual growth, so is it also for student learning and development. We all know, as Dean White has pointed out, "students learn from each other, by working together, by sharing ideas, experiences, and frustrations, in part through their coffee or beer sessions. . . . there is a critical mass, as with faculty, below which you have

students but not a student body, and below which important ingredients of the educational process are missed."

Pondering the question of critical mass, Edward G. Holley, dean of the School of Library Science at the University of North Carolina, suggested at an open meeting of the Committee on Accreditation last January that perhaps no library school can provide a program of adequate quality if its full-time faculty number fewer than ten, its student body comprises fewer than 100 FTE, and if its total budget is less than $400,000. If the Holley requirement were to be put into effect in the U.S., 16 schools on the accredited list (25 percent) would be removed for having failed to satisfy all three of the Holley criteria. An additional 18 would fail to meet two of the three criteria, while seven others would fail on one count. In other words, of the 63 U.S. programs on the accredited list last January, only 22 fully met the Holley test in having no fewer than ten full-time faculty, at least 100 FTE students, and a minimum budget of $400,000. (In computing the FTE of students for this computation, I have generously counted everyone enrolled regardless of level, including even the FTE of undergraduates taking library science courses.) The forthcoming third edition of library education statistics to be published by the Association of American Library Schools will reveal that one library school on the accredited list had only five faculty members on January 1, 1982, another had an FTE of only 26.5 students in its master's program in September 1981 (of whom only 12 were full-time), and another school had total expenditures in 1980-81 of only $182,628. Only 17 U.S. schools, 27 percent, had an FTE enrollment of 100 or more in their master's degree program in the fall of 1981. Fewer than half (30) had support from their parent institution in 1980-81 of $400,000 or more, although when federal and "other" sources of income were added, three more schools met that Holley minimum.

There exists, of course, no central authority that determines in which universities or colleges education for librarianship will be provided, nor in which states such schools should be located. Some would claim that these decisions ought to be provided by ALA's Committee on Accreditation. While accreditation decisions can have an influence on the survival of a library school, it has never been the role of accreditation in any field to determine the need for a program in relationship to the job market at either a national or regional level. As is true of all other accrediting bodies, ALA's COA makes its accreditation decisions on the basis of agreed upon standards. The Standards currently in use were adopted by the ALA Council in 1972. They are qualitative in nature, not quantitative in the manner that Dean Holley's suggested criteria have been stated, nor do they directly pertain to Dean White's "critical mass" approach.

The Standards require that a library school determine its own goals and program objectives, and, to a considerable degree, the COA attempts to judge a master's program in relationship to the objectives that the school has set for it, within the school's own institutional setting. While some eyebrows have always been raised regarding this "self-determination" emphasis in the Standards, with the present fiscal uncertainty in higher education, a growing concern is now being expressed. Again to quote my decanal colleague, Herb White: "Put simplistically and perhaps sarcastically, it may be all right to have a poor quality school as long as that school is in a poor quality university."

There has been a tendency, in my opinion, for visiting teams representing COA

to expect more, in qualitative as well as quantitative terms, of the large and traditionally strong school than of the small and struggling school. Too often, I fear, we tend to marvel at how well some schools do with so little and, perhaps, reward them too generously for their heroic efforts. At the same time, we castigate strong schools for not doing more with so much. It is difficult to apply qualitative standards with an even hand.

The 1972 Standards were written and approved at a time of growth and prosperity for both libraries and library education. It was assumed that programs meeting the provisions of the Standards, even at a minimal level, would, with appropriate leadership and institutional commitment, grow and prosper. The financial and enrollment crises facing many universities today were little imagined between 1969 and 1972 when the present Standards were being drafted by an ALA committee. The writing of new standards for the accreditation of library education programs now needs to be undertaken, in my opinion, against today's economic and demographic realities. The memory of the $40,000 investment in the 1972 Standards, however, may well give the ALA pause in light of its own present financial concerns. (A grant from the H.W. Wilson Foundation supported the writing of the 1972 Standards.)

Many of the universities in which library schools are located are currently facing such overwhelming financial problems that there can be little doubt that some academic units will be eliminated completely. The "smaller but better" concept is by no means limited to the University of Michigan where it was first expressed euphemistically by my own president to put the best possible light on "program review and reduction." It is coming to be recognized that across-the-board reductions in a university cannot be tolerated year after year with the hope that quality can be maintained, nor can tuition be increased annually at a rate greater than the cost of living with the expectation that qualified students will continue to flock to one's academic door. At Michigan, tuition was increased in 1981-82 by 19 percent and by 15 percent in 1982-83.

As universities face the difficult issue of program elimination, and as they consider whether the library school should be a candidate, several factors will be taken into account. Every library school is small in relationship to other professional schools on a given campus. This smallness may, in some instances, actually be an advantage for the library school because its elimination will solve such a small portion of the university's financial problem. On the other hand, it is obvious that small units are easier to eliminate than are large ones.

The dropping of the library school at the University of Oregon a few years ago did not cause a great storm of protest, nor did similar action at the University of Minnesota earlier this year. At this writing, it is too early to gauge reaction to the presidential announcement at Geneseo on July 30, but the fact that a college-wide priorities committee had recommended two years ago that the library school be closed "if budget cutbacks continue to impact the college" gave the school, including its 2,000 alumni, ample warning.

At the University of Missouri-Columbia, on the other hand, where a budgetary short-fall of $7 million was projected last April, the Chancellor's decision to eliminate the School of Library and Informational Science, along with the College of Public and Community Services and a number of departments and programs in other

schools and colleges across the campus, was met with such vehement protest that the President and the Board of Curators of the state-wide university system set aside the Chancellor's decision two months later. The library school, under the leadership of its dean, Ed Miller, was very much a part of the successful protest, but how successful the library school might have been had it been the only unit targeted for closure is debatable. Meanwhile, the $7 million short-fall remains at Columbia, while the Board of Curators examines the mission of the entire university system to determine where the Columbia campus properly fits, and what should be its areas of responsibility. One of the arguments of the Chancellor pertained to the lack of centrality of the library school to the mission of U-M-Columbia.

Enrollment will surely figure as a major issue in determining the candidacy of a library school for elimination, most especially the pattern of that enrollment. If there has been a steady decline, as I have noted is happening to most library schools, and if there is little reason to anticipate a reversal of that trend, a library school, like a school of education or a school of social work in the same situation, is vulnerable.

Much will be made of the relationship of a unit under review for possible elimination and that unit's place in the mission of the university of which it is a part. Most universities, however, do not have very meaningful mission statements, and if it is found that a library school does not properly fit into that statement, it can surely be asked why the school was created in the first place. Too often, the answer will be that, at the time of the library school's creation, there seemed to be a demand for librarians, and, besides, it had not represented a large enough budgetary commitment to matter very much. In other instances, it will be found that the school gradually evolved under the umbrella of the library or the school of education without much notice by the central administration.

Where a number of universities comprise a state system of higher education, as in Missouri, it is possible that a sensible determination can be made as to the location of the single library school that is deemed necessary for the entire state. Included in the arguments made by the dean and faculty against the school's candidacy for elimination at the University of Missouri-Columbia has been that it is the only library school on the accredited list in Missouri. This seems not to have been an effective argument, however, at the University of Minnesota where the decision was made last May to phase out the Library School even though it is the only one in Minnesota. (Although the admission of new students at Minnesota has been "suspended indefinitely," it is expected that courses necessary for the completion of the M.A. degree for students in the program will be made available for the next three years.) Especially interesting in the Minnesota situation is the planned appointment of a task force "to examine the feasibility of developing a substantially restructured program that would provide opportunities for curricular and research activities in information processing and management as well as in the more classical aspects of librarianship." Of equal interest to library-school-watchers will be the report due at Columbia University in September 1983 by a University-wide committee charged by the Provost with making "a thorough and thoughtful exploration of alternative futures for the [library] school." That "alternative futures" should be considered for "the world's oldest library school," which has ranked among the half-dozen best library schools in the U.S. in every study that has been conducted, gives pause to all of us closely associated with library education.

Most universities will doubtless take into account the reputation of each of their individual schools and programs as they attempt to identify candidates for closure. Presidents, vice-presidents, and boards of trustees are constantly searching for external ratings of this nature knowing that they can rarely obtain unbiased data to answer these questions from within their own university. Dean Herbert White's article on perceptions of the ranking of library school programs that appeared in the May 1981 issue of College and Research Libraries will have greater influence, in my opinion, on university administrators in making decisions regarding the future of their library schools than have some of the recent decisions of the Committee on Accreditation. It may be noted that the program at the University of Minnesota was only recently reaccredited by COA, as was that at Geneseo. At Missouri, the recommendation of the Provost to the Chancellor that the library school be eliminated was made only two days before the arrival of a site visit team from the COA. The COA voted full reaccreditation for the Missouri program during its July meeting in Philadelphia.

The prominence of the library school's faculty within the university will play a key role on any campus where program reduction is being considered. Library school faculty have often not found it easy, however, to gain membership on university wide committees, task forces, etc., simply because of the relatively small constituency that they represent. Library school deans have had an advantage in recent years, however, in recommending their faculty for such assignments. Under affirmative action programs, it is a rare university committee today that does not have female representation. Most library schools have had more women with high faculty rank than any school on their campus other than nursing, and the library school dean who has not taken advantage of this opportunity has been negligent. Faculty success in obtaining research grants along with the quality and number of their publications are also elements, of course, that will be taken into close account while a library school's value to its parent institution is being weighed.

An often overlooked strength that library schools have to varying degrees is alumni support. Most universities are highly sensitive to alumni concerns. The library school that has given some priority to keeping in touch with its graduates can count on powerful help from them in times of adversity. No library school graduate wants to list on a vita or in a directory an alma mater that no longer exists.

There is a further point that I want to make about enrollment in library education programs. Librarians who have been in the field for some years are usually amazed when they learn what a library education costs today. Although few ARL directors go back in time as long as I do, let me compare tuition costs when I went to library school at the University of Michigan with those of today, even though, as a World War II veteran, I did not have to pay tuition—there was something called the "G.I. Bill". The Michigan bulletin for 1947-48, under "Semester Fees" reads: "For Michigan students, the fee is $70 for each semester; for non-Michigan students, $150 each semester." There was an increase the following year for out-state students—while Michigan students still paid $70 per semester, out-state students paid $175 in 1948-49.

In those long-distant days, one completed the ABLS degree during the first year in library school, and if one remained for a second year one could earn the AMLS degree. (The two-year program is not really new, you see.) I remained to take the AMLS degree so was enrolled for four semesters at a total cost to the federal

government, which paid my tuition as an out-state student, of $650.

Today at Michigan we require the full-time student to take three trimesters, one calendar year, to complete 36 hours for the AMLS degree. If one is a Michigan resident, this will amount to $1,458 per trimester in 1982-83, or a total of $4,374 for the year. If one comes from out-state, as do nearly half of our students, the cost in 1982-83 will be $3,130 per trimester, for a total of $9,390. For the AMLS degree, even though the time to complete it today is three trimesters instead of four semesters, the cost has risen for the Michigan resident from a total of $280 to $4,374, or by 1,462 percent. For the out-state student, the cost of the AMLS degree, even though the length of time required to complete it is 25 percent less, has gone from $650 to $9,390, or an increase of 1,345 percent.

These figures are meaningful, of course, only when compared to the salaries that today's graduates receive in relationship to those of yesterday (or, perhaps I should say in my case, day before yesterday). I did not take a job in 1949 when I completed my AMLS degree, but decided, since I still had lots of "G.I. time," to go on for my doctorate. But a classmate, James Skipper, also an out-state student, accepted a position in 1949 at what we both considered to be a splendid annual salary, the best of any graduate that year, $3,600, at Washington & Jefferson College. While a shockingly low salary by today's standards, note what that beginning salary in relationship to the cost of the AMLS degree at Michigan in 1949, would have to be in 1983 if salaries had risen by the same percentage as tuition—no less than $52,020. I am doubtful that any Michigan graduate will begin his/her library career with that kind of salary in 1983.

I should hasten to note, however, that the tuition costs that I have quoted for you are by no means uniform across the nation. Among state institutions, Michigan's tuition for graduate students is among the highest, and, for out-state students, it equals that of private universities. Ironically, a Michigan resident can go to the library school at the University of North Carolina, with its two-year (four semesters) program, and pay out-state fees there for a smaller total cost than if he had come to Michigan as an in-state student. Perhaps it is, at least in part, for this reason that North Carolina's highly rated library school, even with its new two-year program, is having no enrollment problem, while at Michigan, as in many other library schools, enrollment is a principal worry.

While tuition costs among most universities have increased this year by percentages unprecedented in the history of higher education, the great disparity among the 62 universities with accredited library education programs will persist. Indeed, because future library school closures will relate in many instances to enrollment levels, this disparity may well be a key factor in determining which will survive.

It is the economic reality of the high cost of library education today in relationship to library salaries that I wish to touch upon before closing these remarks. It is obvious, of course, that for the prospective student there should be some correlation between the cost of a professional degree and the probable salary that he/she can expect to command upon completing that degree, not only on the first job, but during one's entire career. The application of that assumed correlation to fields such as medicine, business administration, law, librarianship, social work, etc. need not be illustrated here except to note that one can risk going heavily in

debt for graduate study if one's salary prospects are those of a physician or lawyer. With this in mind, let us note the average starting salaries for a number of fields where only the bachelor's degree is required (these figures are taken from The American Almanac of Jobs and Salaries published by Avon Books in 1982):

| | |
|---|---|
| accounting | $17,016 |
| economics | 16,440 |
| chemical engineering | 24,360 |
| petroleum engineering | 26,652 |
| biology | 15,216 |
| chemistry | 19,644 |
| computer science | 20,712 |
| mathematics | 19,488 |
| earth sciences | 22,152 |

Of course, starting salaries for persons earning bachelor's degrees in the humanities and some of the social sciences, such as history and sociology, are far below these if jobs exist at all. It should be noted, however, that persons choosing to go to library school are usually from the humanities and the social sciences. Library schools are frequently criticized for their failure to attract students with undergraduate majors in the fields listed above. Note the problem that library schools face, however, when we compare the above starting salaries with those that can be expected if one invests in a master's degree in library science in preparation for a beginning position in an ARL library.

According to an ALA/OLPR report issued in 1981 called The Racial, Ethnic, and Sexual Composition of Library Staff in Academic and Public Libraries, the average beginning salary in academic libraries in 1980 was $13,533. This figure, incidentally, differed little from the same average for public libraries—$13,506. While we can assume that the average for 1982 graduates will be from seven to ten percent higher, we can also be sure that it will compare no more favorably with the list of fields for persons holding only the bachelor's degree mentioned earlier.

The Bowker Annual of 1982, reporting on 1981 salaries for librarians, notes that the average salary for ARL librarians with under five years of experience ranged from $14,525 in the East South Central section of the U.S. to $18,858 in the Pacific West. The average for all 89 ARL libraries reporting was $16,124.

Thus, with up to five years of experience, a librarian in an ARL library can expect an average salary lower than the beginning salary of an individual holding only a bachelor's degree in computer science, accounting, chemistry, engineering, mathematics, the earth sciences, etc.

If library schools cannot recruit on the basis of the beginning salaries for librarians, can one do so with a view toward mid-career opportunities? According to the ARL Salary Survey noted above, the average salary for librarians with from ten to 15 years of experience ranged geographically in 1981 from $17,370 to $24,266. The over-all average for the 89 ARL libraries reporting was $20,890. No recruiter for the library profession today could use this figure very effectively to persuade a young math or science major to invest in a library degree. The American Almanac of Jobs and Salaries cited earlier gives the average mid-career salary for the computer systems analyst as $34,000, the health services administrator as $37,500,

the geologist as $31,000, and the engineer as $35,000.

Even with over 15 years of experience, ARL librarians received an average salary of only $22,948 in 1981.

While salary potential alone should not be the sole basis for choosing a career, it is a powerful element. The individual committed to a service profession may well say that salary is not important so long as it is enough to live comfortably. In today's inflationary times, however, one can question whether a beginning annual salary of less than $15,000 is sufficient to enable one who has invested in at least one year of graduate study to live at a level he/she would judge to be comfortable.

Earlier I noted the cost in tuition alone for the master's degree in library science in 1982-83 at the University of Michigan—$4,374 for the Michigan resident and $9,390 for the out-state student. When one adds the cost of living in Ann Arbor for a year to the out-state student's tuition bill, that total adds up to an amount very similar to the average beginning salary in ARL libraries. Furthermore, many students at the graduate level have accumulated debts for their undergraduate education. Thirty-eight percent of the applicants for the Michigan program this fall, for example, listed debts averaging $5,343 per student.

Unless academic research libraries can find a means to improve their salary structure in a very substantial manner, it is my prediction that they will not succeed in attracting to their staffs the "new breed" of library school graduates that they want—i.e., talented individuals with mathematical and scientific backgrounds. Even if such individuals come to library school, they will often be attracted by the much higher salary offers extended by the information industry. Most library schools can cite examples of recent graduates whose non-traditional backgrounds would have made them highly attractive to a major research library, but who were hired by the information industry at salaries in the $25,000 to $30,000 bracket.

Even in the recruitment of students for Michigan's special CLR program in academic research librarianship for which scholarships amounting to roughly $20,000 (including tuition) are available, we have had difficulty in explaining the small beginning salaries that they can expect in academic research libraries, even though we have assured them of the unusual opportunities that they will probably have as "CLR Fellows."

Having presented the salary problem, which is certainly not new to you, I have no solution to suggest, but I do believe that this is one of the major problems that academic research libraries will face in the 1980s. It is also a major problem for library schools as we attempt to respond to your concern that we are failing to recruit the kind of individuals who should fill the key posts in academic research libraries a decade or two from now.

As I indicated at the beginning of these remarks, there are at least a score of issues in library education worthy of discussion by ARL, including the appropriate length of the master's program; the place of specialization in library education; general curriculum content, including the old debate on the theoretical vs. the practical; the place of field experience and/or internships; admission standards; the professional value of specialist certificates and doctoral degrees as opposed to advanced degrees in cognate areas; continuing education as a library school's

responsibility; faculty qualifications; accreditation standards; etc. I am not sure that I have chosen properly in asking you to consider only demographic and economic issues, but for a number of schools these concerns have, of late, become primary. When library school deans meet these days, one of the first pieces of information exchanged is current and projected enrollment figures. Budget prospects and the placement picture quickly follow. I believe that, whether or not I have chosen the most important issues, I have, at least, been timely.

APPENDIX B-2

# THE REAL WORLD: LARGE LIBRARY ORGANIZATIONS*

Patricia Battin
Columbia University

On this panel and with this audience, I feel somewhat like the spy who came in from the cold. I appreciate the opportunity to get warm at the theoretical fires in the academy as a brief respite from the chilling realities of the outside world.

My purpose today is to provide you with an unvarnished view of the realities of modern research libraries, in the hope that such a review will assist you in planning and developing educational programs to provide us with the necessary training and talent. Since I have long maintained, in fending off faculty interference with library operations, that it is the proper responsibility of the user to state the need and that it is the proper responsibility of the experts to determine how objectives are served, I cannot, with any grace, presume to tell a roomful of library educators how to educate the future members of our profession.

As librarians and library faculty, we have been taking unproductive potshots at each other for over a decade. I am delighted to have this opportunity to engage in a constructive discussion about our mutual concerns over the adequacy of our educational requirements for a rapidly changing profession. I have sensed a certain note of irritability, not unlike Sigmund Freud's famous plaintive query, coming to us from the academy. "What do library directors want?" I shall try to answer that question today.

It occurred to me as a sort of blinding revelation during the preparation of this talk that it is quite possible that the revolution in large research libraries has not really been fully comprehended or internalized by our colleagues on library school faculties. I say this because in many respects, the university itself, with the exception of the library, has perhaps resisted more successfully than any other social institution the enormous changes which have transformed our society in the past fifty years. In many ways, very little in your working lives has changed, in stark contrast to ours. In a sense, the revolution that is rocking research libraries is almost totally obscured to our colleagues by our location in the midst of institutions still largely governed by centuries' old traditions, rituals, and decision-making processes. We live side by side in the same community but in radically different worlds. And I think that this familiarity has bred a false assumption that we know and understand each other's concerns and constraints far better than we do.

I would like to be clear at the outset that I believe that both our educational process and the organizational structures of our research libraries need revision and reform. One observer has noted that we are a self-hating profession, and I think to a

*Panel presentation by Patricia Battin, Vice President and University Librarian, Columbia University, at the Association of American Library Schools Annual Conference, January 22, 1982, Denver, Colorado.

large extent that observation is unfortunately all too accurate. Perhaps we have come to believe our own publicity and have internalized the low esteem accorded by our society.

It seems to me the fact of our poor public image has led us to set our sights much too low in defining our professional responsibilities and expectations, in accepting recruits into the profession, and in governing our judgment of adequate standards for graduation from our professional education programs.

That being said, a fair rejoinder from the library schools is that professional salaries are decidedly unattractive, that university library organizations are rigid, hierarchical, and bureaucratic, and that job responsibilities are clerical and boring. We have a classic chicken and egg situation. Many of us have been frustrated in our attempts to achieve substantial increases in salary schedules and to transform our library environments precisely because of the lack of talented, hard-working, and well-trained individuals to take on the resulting challenges and responsibilities.

In this regard, I have reluctantly become convinced that as responsible employers, we cannot settle for less than we need, and so I have come to believe that one way to crack the chicken and egg syndrome is for employers to hire the talent they need, and hope that the M.L.S. will follow, or else to set up, as large corporations have done, our own educational programs to provide the specialized training we perceive as necessary. If the choice lies between credentials and talent, I think we must opt for the talent. I hope, however, that we can break through the barriers of misunderstanding that have prevented a cooperative approach to this problem. As a profession, neither employers nor educators can continue to wait for the other side to clean up the act.

Because of the fundamental and far-reaching changes in our responsibilities to provide scholarly information services to universities, I have made the case to my university administration, in my efforts to upgrade professional salaries, that the quality of the library staff during the next decade will be more important to the future health and vitality of the university than the quality of the instructional and administrative staff. I would not have made this heretical statement twenty or even ten years ago, and I do not mean it as a derogation of the importance of faculty contributions. But the combination of limited financial resources and the development of information technology has created an environment in which decisions made, or conversely, not made, during this next decade will largely determine the capacity of the university to provide, on an affordable and continuing basis, the scholarly information systems necessary to support its research and instructional programs. We cannot afford either ill-informed judgments or a failure to act. We need people in the profession who have a clear understanding of the professional challenges ahead, who are prepared to make a strong intellectual commitment at the beginning of the graduate program, and who conscientiously and systematically educate themselves for those clearly-perceived responsibilities.

So—what are we looking for and what are the specific changes which seem to us to have invalidated our traditional concepts of preparation for the profession? Let me suggest four basic personal qualifications and then four essential recognitions that must be made if we are to meet our responsibilities.

The qualifications that I consider critical for the decade facing us are these:

1) A first-rate mind with problem-solving abilities; in my opinion, this requirement is non-negotiable.

2) A solid undergraduate preparation in any of a variety of disciplines: the key is the rigor of the training, not the subject discipline. As two observers have noted, academic librarianship is an aggregate of professions and librarians must be multi-literate. We can accommodate quality in all its glorious manifestations.

3) Concrete evidence of managerial abilities: almost every research library responsibility, even at the entry level, now requires some degree of sophisticated management of either people or resources. The trend is expected to intensify as staffing resources dwindle and information technology becomes more complex.

4) An intellectual commitment to research librarianship. The inclusion of the fourth element may surprise you, but it seems to me that so many members of our profession really do not have a strong intellectual commitment to librarianship and that our educational programs reflect and encourage that ambivalence. I have interviewed many young librarians, fresh from prestigious library schools, who cannot articulate to me the reasons why they entered the profession, their personal career goals, or their sense of the future of the professional career. I seldom find, in talking to librarians, the same kind of crisp, thoughtful, and directed career orientation that I find in my conversations with members of other professional groups.

The four basic recognitions which must in my opinion, underlie any successful planning effort for programs to produce professionals prepared to cope with the real world are the following:

1) The recognition that all libraries and librarians are not alike and that research libraries, by virtue of their size, mission, and clientele, require a specially designed set of qualifications and rigorous educational preparation. The full acceptance of this concept, rather than the lip service we have accorded in the past, could well lead us into a number of radical proposals. I think it is time to confront these issues. If we are to develop the kind of talent necessary to assume the awesome responsibility for the management and provision of scholarly information in all its formats in our universities in the year 2000, we must relinquish our long-held notion that one faculty, one curriculum, and one set of admissions requirements are adequate for all who share the title "librarian." I am well aware of the problems, including the smallness of the population and the enormity of the financial demands, which have frustrated our previous efforts to address this issue within the traditional library school framework. That is why I suggested earlier that we may have to look to unprecedented solutions since I am convinced that any educational program which ignores this basic premise will not succeed.

2) The recognition that a program of professsional education should imply preparation for a life-long career as opposed to a vocational training program which focuses on requirements for entry-level positions. I would like to see our professional education programs emphasize the ability to learn how to learn and to focus on developing the analytical and problem-solving capacities that support successful performance throughout a demanding and changing career.

3) The recognition that because of a combination of factors familiar to you all the research library world is in turmoil. But because of the dislocating nature of the familiarity we share, as I mentioned earlier, you may not realize that every principle and assumption upon which we have built our libraries for the past one hundred years is being questioned today. For example, it is becoming clear to university officers that our universities will have neither the space nor the funds for continuing library construction to support business as usual throughout the next two decades. Some institutions have already made the decision that there will be no more library construction. That has serious implications for our traditional principles of collection development.

It is rapidly becoming clear to library directors that our institutions cannot afford the methods, the level, and the standards of bibliographic control that have been accepted without question or significant research into their use or the validity of our assumptions for years.

Students and faculty are putting unprecedented and unmanageable demands on librares as the rate of publication continues to expand and publication costs soar. Information technology provides far more opportunities for services and products than we can afford.

Fundamental decisions involving large sums of money must be made. Higher education faces the bleakest decade that our generation has known. Our universities cannot now afford to support traditional library services at the expected level. Information technology has transformed the process of scholarly communication. Scholars are by and large conservative folk, and because the university does not manifest visible change, faculty are often slow to perceive the vastly changed demands they make on library services. They want unprecedented speed, unprecedented volume, unprecedented range of format and subject coverage. There is no longer even an accepted definition of "academic level" materials.

Under such conditions of use and because of the deterioration of standards used in book production, the book has become a very fragile and uneconomic medium for scholarly communication. You are all familiar with our enormous problems of preservation and conservation for archival purposes. I wonder if you are also aware of the substantial costs of the simple re-binding required after two or three uses of a book in heavy demand.

In addition, the reality and the potential of networks and consortia demand an unprecedented degree of managerial sophistication and the ability to function effectively in a large and complex environment.

4) And finally, the recognition that, in contrast to most autonomous schools and departments in the university, research libraries are big, labor-intensive organizations, providing services to all components of the host institutions with, as well, local, regional, and national obligations. Librarians must balance a growing tangle of priorities and functions effectively within an increasingly complex series of interconnected webs and networks.

I think it is fair to say that our educational programs in the past have emphasized the acceptance and understanding of a body of traditional principles for the organization of knowledge and the dissemination of information. We accurately perceived our professional role to be implementors and followers rather than creators and leaders.

In a paper delivered ten years ago, Robert Vosper[1] analyzed and described the major challenges for library management in the decade of the seventies. He was right on the mark in his application to research libraries of Harlan Cleveland's prescription for the kind of talent required for the management of large organizations in his book The Future Executive.[2] Ten years later it does not take a visionary to perceive that university libraries are indeed organizations characterized by bigness, complexity, and change, and as such, demand a special set of qualifications in those individuals who would be successful in this environment. Foremost among these abilities are problem-solving skills, a high degree of flexibility, an ease with ambiguity, managerial and supervisory skills, and the capacity to operate continuously and creatively within a web of tensions.

In contrast, it seems to me that despite the early recognitions of the changes in our libraries, our educational programs for academic librarianship have continued to stress an individualistic bias—the concept of the autonomous professional—and have actively promoted and encouraged the development of narrow specialists, either in academic subject disciplines or within the library profession. The educational program assumes an academic library organization similar to the model followed by other academic divisions of the university—i.e. a group of autonomous colleagues loosely connected in a collegial governance structure. While this model may still be accurate for those components of the university engaged primarily in teaching and research, or for smaller academic libraries, it no longer describes the large modern research library. Cleveland's perceptions reflect in stunningly accurate detail the dilemmas in our research libraries stemming from the dislocation of individuals trained for one environment and forced to function in another:

"The trouble with promoting people through specialized achievement to positions of leadership . . . is that the resulting leaders do not necessarily stop thinking as experts . . .

"If he is gong to exercise his influence, the 'influential' needs to develop a kind of competence that was typically not featured in the education that qualified him for the climb up his chosen ladder. The new skill is in bringing experts together in organization systems to

make judgments and take actions that none of them could manage alone."[3]

"It is easier to be an expert, with the obligation merely to be right, than to be a leader, with the obligation to fuse a dozen forms of rigid rectitude into relevant action."[4]

He goes on to describe the future executive as "brainy, low-key, collegial, optimistic, and one thing more, he will positively enjoy complexity and constant change."[5] "The obligation to think hard, fast, and free is the one executive function that cannot be delegated."[6]

In research libraries today, we need people who have been trained to question assumptions, collect data, resolve conflicts, make informed judgments, and take decisive action. We need people who have been taught to learn how to learn in a constantly changing environment. We need people who understand at all levels the responsibility for financial accountability. Our institutions cannot afford another AACR 2. We need individuals who can speak and write well—and with precision—and who can interact effectively with a broad range of scholarly experts. We need professionals who understand and accept their responsibility to identify and analyze the costs of scholarly information services and to take the initiative in devising alternative budget strategies to enable the university to provide the necessary information support for the scholarly community. We need people who can make effective long-range plans for the library in a university environment characterized by short-range planning and an endemic inability to set academic priorities. We need people who welcome the challenge of re-inventing the research library in the technological environment and who are prepared to take the risks involved in making bold and unprecedented decisions.

While it would be very comfortable for me to end my presentation at this point and shift to the library schools all responsibility for providing such paragons, I will reject my own earlier advice and offer some suggestions for cooperative activities for your comment and consideration.

For those of us in universities which host both a library school and a research library, we can make a concerted, cooperative attempt to enlist the aid and support of our administrations in subsidizing the inevitable initial decline in enrollments during a transition period to higher standards and strengthened academic requirements. Since universities are the primary employers of research librarians, it seems to me to be in their enlightened self-interest to support the transformation of professional education.

In addition, there are a number of small ways in which we can establish more effective links between students, educators, and librarians. Librarians could serve as regularly assigned advisors to students interested in research library careers, and library staffs could host career days which would provide informative sessions on current profession challenges and first-hand assessments of the job environment.

As a group, employers should become much more actively involved in the recruitment process and take a major initiative in disseminating information about the joys and rewards of careers in research librarianship.

As a way to provide much greater career opportunity and flexibility in our

libraries, organizations such as the Research Libraries Group could develop an internship program which would provide, for example, four or five internships annually for qualified graduates. While I have not discussed this idea at length with my RLG colleagues, Ed Shaw and I have speculated on such a possibility. Each library would support, from its own operating funds, an intern every four or five years. Interns would be chosen on a competitive basis by an RLG Selection Committee and would spend the year working in a variety of assignments in the host library as well as experience the opportunity to attend some Board and Committee sessions. The visibility of the interns, the strength of the selection process and the internship experience, and the exposure to a much broader view of the profession would undoubtedly lead to continuing employment within the RLG libraries. Such a program could vastly increase our capacity to provide a directed, timely process of advancement through positions of increasing responsibility.

And finally, as I have indicated earlier, perhaps we should look more closely at the model in the corporate sector for a more radical approach to our special problem. Library school deans have made the point that we are asking for an extraordinary commitment of resources for a very small market. Perhaps because our need is so inter-disciplinary and our numbers are so small, we should seriously consider developing a graduate educational program in the research libraries. It is possible that a curriculum involving adjunct faculty from a number of departments and schools, including the library school, and providing an internship experience, could be more economically and successfully administered by the Library. Such a program would probably also be more responsive to the specific needs and rapid changes occurring in research libraries. Certification and accreditation standards would have to be worked out. This degree would be for those individuals interested in pursuing a career in research library management. The library schools would of course continue to educate individuals interested in research and teaching careers.

Radical times demand radical solutions. It is imperative that we work together to select and train members of our profession for dynamic leadership in a world where, in contrast to the past, our only boundaries are new frontiers.

References:


1. Robert Vosper, "The Role of the University Library Director: Principal Issues of the Seventies." Paper delivered at the Second U.S.-Japan Conference on Libraries and Information Science in Higher Education, Racine, Wisconsin, October 17-20, 1972.

2. Harlan Cleveland, The Future Executive, A Guide for Tomorrow's Managers. New York, Harper & Row, 1972.

3. Ibid, p. 72.

4. Ibid, p. 73.

5. Ibid, p. 89.

6. Ibid, p. 79.

## APPENDIX C

## EXECUTIVE DIRECTOR'S REPORT

This Report on ARL activities is the first in the Assciation's second half-century. At its first meeting in December 1932, ARL discussed cooperation with scholarly societies, centers of responsibility for documents collections, and the discontinuance of a major abstracting service in the social sciences. At its 62nd meeting (in July 1963), ARL members heard the first report from their first Executive Secretary, James Skipper. Mr. Skipper reported on pressures on library costs, legislation to improve federal funding for higher education, and on a newly proposed IRS regulation on gifts. He also reported participating in several meetings on revision of the Copyright Law; and that he had attended meetings on automation and information retrieval in libraries, on microfilms, and on indexing and abstracting services.

At today's one hundred-and first ARL meeting, I shall report to you on ARL activities in a number of areas, including, but not limited to communications with scholarly societies, a cooperative project with the National Federation of Abstracting and Information Services, federal funding for libraries in higher education, changes in the tax code relating to gifts to libraries, the Copyright Law review, and the ARL Microform Project. Plus ca change.

### Legislation and Federal Agencies

As has long been anticipated, most of the U.S. government is currently being funded by a continuing resolution adopted on October 1. This resolution will expire on December 22. Congress will reconvene after the November election, and by the December deadline will either have completed work on appropriations for federal agencies and departments or will again resort to a continuing resolution. In the meantime, most federal agencies, including the Department of Education and the National Endowment for the Humanities, are operating at 1982 funding levels.

### National Endowment for the Humanities

In August, NEH requested Congressional authority to transfer $10.2 million from the Education and General Programs divisions into Research and Fellowships. $5.2 million of this sum was to be used in a special initiative for independent research libraries. This request met with some opposition in the Interior subcommittees of both the House and the Senate. A reprogramming request as large as this one, involving nearly 8% of the agency's budget, was bound to raise eyebrows. A move of this magnitude was seen by some as a major shift in priorities. (It is important to note that members of Congress and their staffs, while strongly supporting public humanities programs, do not necessarily oppose scholarly research. They do believe that major changes in direction should be proposed in a way that allows for discussion and debate.)

A compromise was finally agreed upon whereby, via the continuing resolution passed on October 1, the $5.2 million for independent research libraries will be carried over until next year and placed under NEH's Challenge Grant program.

Since appropriations for FY 1983 are still dependent upon action to be taken after the Congressional recess, it is not certain at this time what the final outcome of this issue will be.

It should be remembered that NEH requested the reprogramming because there had been a substantial drop in applications in the General Programs Division. In addition, FY '82 has seen NEH coping with fund deferrals, cancellation of deadlines, early uncertainty about the agency's very future, a change of chairman, and several vacancies in senior program positions. The most important vacancy from the viewpoint of research libraries is the position of Assistant Director of the Research Resources Program. In June of this year, Dr. Margaret Child left the Endowment to become Assistant Director for Research Services at the Library of the Smithsonian Institution. Dr. Child has been a good friend to research libraries during her eight years at NEH, and it is our hope that her successor will continue along the road she so ably mapped for the Research Resources Program. A search is currently underway to fill this position at NEH.

Department of Education and Title II-C

There has been some discussion in the Department of Education about a reorganization which would involve the Office of Libraries and Learning Technologies, but no details are available at this time. It is rumored that the Administration's budget for 1984 will again propose zero funding for library programs, but Departmental budgets are not being presented to the Office of Management and Budget until later this month, so this is not a certainty as yet. Title II-C funds under the continuing resolution are at the 1982 final level, $5.76 million. The new II-C regulations became effective on September 27; they were mailed with applications packets shortly thereafter. The deadline for applications is November 15, and grant awards will be announced on June 30, 1983.

Library of Congress

The Library of Congress FY 1983 appropriations bill was approved on September 30. Total appropriations for LC excluding the Congressional Research Service are $169,828,000, or $6,310,000 more than 1982 appropriations. L.C. gained a few staff positions, and special amounts were allocated for conservation supplies, the dizethyl zinc preservation project, and conservation of the L.C. collection of county atlases.

National Agricultural Library

Early in 1982, the Secretary of Agriculture appointed an intra-agency panel to review NAL activities and operations. The panel's report, containing a number of recommendations designed to improve NAL's status as a central national information resource for agriculture and related sciences, was presented on August 15. ARL directors in land grant institutions were mailed copies of this report in late August.

The report recommends that NAL be provided with a strong mission statement, that an Advisory Committee be appointed from the library/information and agricultural science communities to advise the Secretary of Agriculture on policy, that planning proceed immediately on a national agricultural information network, that NAL be situated in the Department of Agriculture at level that will allow policy direction and guidance to be provided directly by the Office of the Secretary, and that the internal organization of NAL be streamlined. The report also

recommended that staff be increased by 50 positions, urged that supplemental funds of approximately $3 million over the next two years be provided to improve services, and that a number of other specific actions be taken to improve NAL products and services.

The panel's report has apparently been received positively by the Secretary of Agriculture, and several recommedations are already being acted upon.

National Library of Medicine

NLM is operating under continuing resolution funding at the 1982 level — $45,035,000. Their 1983 request is for approximately $1,000,000 more than this amount, but no action has been taken yet in either house on the omnibus medical appropriations bills, of which NLM's operations and programs are a part. There may be significant obstacles to the passage of this legislation because of major differences between the Senate and House versions of other parts of the bill.

The Medical Library Assistance Act is up for reauthorization. The House bill, proposed by Congressman Waxman of California, contains reauthorization levels for 1983-85 of $8 million, $8.5 million, and $9 million. However, there are other issues in the Waxman bill related to recodification for all units of the National Institutes of Health. This is very different from what is being proposed in the Senate. It is also possible that no reauthorization will be enacted during this lameduck session of Congress.

The public/private sector issue is still a major one for NLM. It is interesting to note that neither the Senate nor the House versions of NLM's proposed appropriations legislation contain a cost recovery amendment at this time, a significant improvement in the situation that obtained earlier in the year. In fact, a recent House report endorsed "the present effective cost-sharing arrangement wherein the federal government supports the creation of the MEDLARS system and users in the biomedical community pay the full costs of access. . ." A study released by the General Accounting Office in April concluded that NLM's pricing policies were consistent with federal statutes and regulations. Further support for this view of the proper relationship between public and private sectors is expected in the soon-to-be released study by the Congressional Office of Technology Assessment, since the OTA's Advisory Panel recommended that NLM should recover full access costs, but not the costs of building the data bases.

Tax Reform

The Artist's Tax Equity and Donations bill was reported out of the Senate Finance Committee on October 1. The bill must still survive consideration by the Senate and the deliberations of a conference committee. Members of the ARL legislative network, especially those in states represented by Senators who are members of the Finance Committee, have made notable efforts on behalf of this legislation. We will monitor the further progress of this legislation, and will continue to ask ARL directors to help move it along by contacting key Senators and Representatives, as appropriate.

Copyright - The Five-Year Review

The U.S. Copyright Office has begun to write its report to the Congress, due in

January 1983. In late June, a study of library photocopying practices by King Research, Inc. was released for comment. All of the major library associations, including ARL, submitted comments on the report, as did publishers' and authors organizations, and a number of individual libraries and librarians. A brief summary of the report's more important conclusions appeared in the June 17 ARL Newsletter. ARL stated in its comments that:

> "To the extent to which it provides data that bear on the issue before the Register, the King Research Report supports the conclusion that a balance has been achieved and confirms the view held by librarians that traditional photocopying practices, which are essential to scholarship and research, do not injure publishers."

In ARL's view, Section 108 has achieved the balance intended by the Congress (between the rights of creators and the needs of users). This balance fosters the public welfare. The data in the King Report show that publishers have prospered in the five years since the law became effective. Prices for scholarly, scientific, and technical journals have increased in constant dollars, as have publishers' gross sales. ARL's concluding recommendation is that Congress should undertake no changes in Section 107 or 108, a conclusion with which most of the other comments from library-related organizations concurred. Copies of ARL's comments are available from the ARL Office.

There are a number of other federal regulatory matters which ARL continues to monitor, including but not limited to, the Office of Personnel Management (OPM) job classification standards for federally-employed librarians, and the possible effect of the Office of Management and Budget (OMB) Circular A-76 on the contracting out of federal information operations and services. Progress, or lack thereof, on these matters will continue to be reported in the ARL Newsletter.

## ARL Projects and Programs

### OMS

In September, ARL received a grant of $250,000 from the General Electric Foundation to support a Public Services Project of the Office of Management Studies. An Advisory Committee has been appointed for this Project, and an introductory meeting to acquaint ARL directors with its purpose and goals was held during this ARL meeting. Duane Webster will be reporting on this project later in this Meeting. I would like to take this opportunity to thank the General Electric Foundation for their generous support of this effort to improve the management of public service functions in research libraries.

OMS has also been the recipient of a small grant from NEH to cover printing and distribution costs for dissemination of the Preservation Planning Manual that was developed during the Preservation Project funded by NEH in 1981.

### CCRM

The Center for Chinese Research Materials continues to fulfill its charge of making rare materials in the area of Chinese studies available for scholars and

research libraries all over the world. On July 20, P.K. Yu who had been Director of CCRM since its foundation in 1968, retired. Dr. Pingfeng Chi has been named Acting Director of the Center. CCRM is currently operating largely on its own funds, with some support from the Mellon Foundation. Some substantial improvements in CCRM operations have been effected during the past six months; during the next half-year the CCRM Advisory Committee together with staff of the Center and ARL will address plans for the future operation of this program.

ARL Microform Project

Last May, the ARL Microform Project surveyed libraries in the United States and Canada to gather information about holdings and cataloging of microform sets. Although the formal deadline for response was June 30th, responses from libraries holding sets and interested in cataloging them continue to arrive. The rate of return from this target group of libraries has been estimated at about 75%. Analysis thus far performed on 289 responses indicate that these respondents hold more than 8,100 microform sets. The average number of holdings per library is about 25 sets, a rate that may drop slightly as remaining responses are keyed into the database.

More than two-thirds of the responding libraries express a commitment to cooperative cataloging. A number of libraries are willing to cooperate in cataloging 20 or more sets each, and the average number of sets listed for cooperative cataloging is five per return. Some sets have over 10 libraries willing to cooperate in cataloging them and many have five or more.

In addition to quantifiable data, the survey forms contain a wealth of commentary. As well as expressing strong support for the project and its goals, they state that the task of completing the survey helped them to establish local record-keeping systems for microform holdings and their bibliographic control. One head of cataloging wrote, "The exercise of completing the questionnaire was helpful to me in reviewing our cataloging policies and the state of bibliographic control of our holdings in microform." Similarly, a microforms librarian wrote, "The survey sheets which we received had led to discussion on the future of microforms at [the library] which has been instructive and welcome."

A full report on survey results should be ready before the year is out, and summaries are likely to be available for distribution for discussion at the American Library Association's Midwinter conference in San Antonio, Texas.

The proposal to expand the preservation component of this project about which I reported to you at the May 1982 ARL meeting was submitted to NEH shortly thereafter. The Endowment informed ARL on September 28 that the proposal has been funded.

Many of the project's initial objectives have been accomplished. Several major microform cataloging projects are underway at ARL libraries; OCLC has developed a profile matching mechanism; two large microform publishers are studying ways to distribute their cataloging in machine-readable form; RLG and OCLC have agreed to exchange tapes for several specific sets cataloged by their members; and an information clearinghouse to support cooperative cataloging is under development. The ARL Board is currently considering a staff proposal to extend this project through the end of 1984 in order to exploit more fully the opportunities for cooperative cataloging.

## ARL/AAAH Project

The test distribution of Library Issues at the Universities of North Carolina and Colorado and at Princeton University was completed in April, and a questionnaire addressed to faculty on the three participating campuses was distributed with the last issue. Returns have been analyzed, and a report is currently under review by the Board of Directors, and will shortly be sent to the membership. The report concludes that a campus-based newsletter is the tool preferred by faculty for information about library issues, and points to steps that can be taken by individual ARL directors and by the Association to improve communications with faculty members.

Other efforts to improve communications with the scholarly community have included participation by the ARL Executive Director amd Past-President Jay Lucker on a panel on copyright and economic issues related to research libraries and scholarly publications at the annual meeting of the Society for Scholarly Publishing, and participation in the ACLS Committee on Scholarly Communications.

## CONSER A&I Project

A joint proposal by ARL/NFAIS to add abstracting and indexing information to records in the CONSER database was approved by the Board of both organizations earlier this year. This proposal is now under consideration by several funding agencies. Responses from at least two of the potential sources of funds are expected within the next two months. Letters endorsing the proposal have been received from the Network Advisory Committee and the ALA/RTSD Serials Section.

## ARL Committees and Task Forces

Committees and Task Forces responded to a suggestion made by the Executive Committee based on comments at the May 1982 Membership Meeting by formally inviting ARL directors to attend Committee and Task Force meetings during this ARL Meeting. It is to be hoped that many directors availed themselves of the opportunity to learn at first-hand more about the work of these groups.

A brief report on the results of the Inter-Library Loan Committee's survey is scheduled for this meeting, as is a full report from the Library Education Task Force.

All ARL Committees and Task Forces have been asked to prepare a statement of short- and long-term goals for consideration by the Board as part of ARL's planning effort. Committees and Task Forces continue to report to the Board and membership as appropriate through the Newsletter and oral or written reports at Board and membership meetings. As committee activities continue to increase, the question of staff support for these activities is under review by the Board. The intent of this review is to rationalize and improve staff support where it is most needed, and to set some priorities.

## 1983 Budget

Information on the budget and a proposed dues increase of $550 per member was mailed to ARL directors on September 21, immediately after the September 20 Executive Committee Meeting. Discussion of this item will take place at the "members-only" meeting on October 14.

APPENDIX D

NATIONAL ENDOWMENT FOR THE HUMANITIES

WASHINGTON, D.C. 20506

October 6, 1982

To: ARL Membership Meeting, October 1982, Washinton, D.C.

From: Jeffrey Field, Acting Assistant Director
Research Resources Program

Re: The National Endowment for the Humanities Research Resources Program: Activities and New Directions

Budget and Grantmaking Overview

The Endowment's FY 1983 appropriations request contains $3 million for Resources plus $400,000 for the programs's Conservation/Preservation line. Our FY 1982 expenditures were approximately $3.4 million.

About 75 percent of our grants are for archival projects (number of awards, not dollar amounts). 10 percent of our grants provide funding for bibliographies of both retrospective and current secondary materials. The remaining 15 percent of the grants support library cataloging projects, conservation/preservation activities, national bibliographic enhancement projects, and consultant awards for small institutions to analyze collection-specific problems.

Significant Current Grants

In February, 1982 we made a grant of $150,000 outright and $200,000 in Treasury Funds (to be matched on a 2:1 basis) to continue the development of the Eighteenth Century Short Title Catalogue (ESTC). Projects funded in July, 1982 include a grant of $143,000 to the Research Libraries Group for An Automated Union Catalog of Microform Master Negatives and two grants to ARL: an award of $64,000 to extend the ARL Microform Project and a grant of $8,000 to fund the distribution of the ARL/OMS Preservation Planning Program Resource Notebook. The Society of American Archivists' National Information Systems Task Force (NISTF) has recently completed its work on establishing pre-requisites for national data bases for archives and manuscripts. A grant to the University of Kansas will provide a guide to the University's collection of English literature and historical manuscripts, 16th through the 19th centuries. An award to Vanderbilt University will allow input of cataloging data on the University's Baudelaire Collection into OCLC/SOLINET.

Conservation/Preservation

Established in FY 1981 as a separate line item within the Research Resources Program, C/P funds continue to support regional cooperative activities, national workshop programs, and national planning efforts in both the library and archival fields. In FY 1983 the United States Newspapers Project will become part of the Resource Program's national C/P effort. Launched with a $1 million series of grants to six national newspapers repositories, the U.S. Newspaper Project will provide for the input of bibliographic data to the CONSER data base. The project intends to cover 50 states and 5 U.S. territories. Bibliographic projects are to be followed by preservation microfilming projects, preserving a very large portion of all U.S. newspapers published since 1690.

New Program Directions

While the Research Resources Program will continue to fund library cataloging and archival processing projects, we will begin to stress cooperative approaches to national library and archival problems, both in the area of conservation/preservation and in the area of archival appraisal and its library analog, collection development and management. What to acquire, how much, and by which institutions are common library and archival problems. The Resources Program will encourage approaches to these problems through the context of specific cataloging and processing projects and also through library, archival, and scholarly organizations. Active cooperation among these organizations will be key to our second major program goal: to bring the user communities into closer communication with the service communities. The National Endowment for the Humanities can play a unique national role in bringing together scholars, who are the ultimate constituency of the Research Resource Program, with library and archival professionals to enhance mutual understanding of needs and constraints and to foster cooperative decision-making in areas that affect the welfare of all. The Endowment is particularly interested in working with and through national organizations in fostering these new program directions. We have the means of assisting you in work on these problems, but you must initiate the ideas and projects. The times call for enhanced national cooperative activities. Let's hear from you on this!

APPENDIX E

COUNCIL ON LIBRARY RESOURCES
1785 Massachusetts Avenue, N.W. • Washington, D.C. 20036 • Tel. 202-483-7474

October 4, 1982

BIBLIOGRAPHIC SERVICE DEVELOPMENT PROGRAM
Progress Report

Third Quarter 1982 - Ending September 30

This report is organized according to major program areas and is limited to activities under way during the third quarter of 1982.

STANDARDS AND GUIDES

1. Work on the Application Level of the seven level telecommunication protocol experienced slight delays during the last three months. The principal delay was caused by concern that work going on in Canada on telecommunication protocols might not be compatible with that going on here in the U.S. Several discussions, supported by a grant from the Council, have assured that over the long haul the standards used in the two countries will be compatible. The work in Canada is focused on the transfer of large files between computers while that in the U.S. is focused on the transfer of individual records. The Application Level protocol project has been granted a no-cost three month extension and is due to be completed by the end of October.

2. Modest support for ANSI Subcommittee Z39 has been authorized for the next two years. The grant is in recognition of the Council's interest in the development of telecomunication and other standards required for rational growth of bibliographic processes and services.

3. Support has also been authorized for a meeting to evaluate the usefulness of a proposed detailed holdings format. The grant to the University of Florida will help bring together a group of interested parties to examine how the proposed format has performed in several test sites.

ACCESS TO BIBLIOGRAPHIC DATA

1. The ARL Microform Project has completed gathering information concerning the processing of major microform collections into bibliographic databases. A progress report is available from the ARL office. The process of developing a strategy for processing these large collections in a reasoned and organized fashion is now under way.

2. Rutgers University has been funded to begin work on the compilation of a database of machine-readable texts in the humanities. An advisory group has been formed and an initial data gathering instrument has been devised in an effort to identify repositories of such material. The actual database will be built at Rutgers but will migrate to the RLG-operated RLIN system at some time in the future.

3. Professor Rosenberg at the University of Michigan School of Library Science has been at work on a project to produce software that will allow home computers (some varieties) to claim records from large bibliographic files, format these records into standard formats for footnotes or bibliographies, and print them out or integrate them into other text. The software will provide a way to manage modest files of bibliographic records for use by individuals. Funds are running short for this project and there is still more development work to be done.

LINK BIBLIOGRAPHIC DATABASES

1. The Linked Systems Project, in which the computer systems of the Library of Congress, the Research Libraries Group, and the Washington Library Network will be linked, continues to make progress though there have been some delays in the last few months. This portion of the project is designed to develop the telecommunication protocols to control communication between the computer systems. The basic work done by the National Bureau of Standards presented some unexpected problems that had to be resolved before the project could continue. That problem has been resolved. Problems of funding at the Library of Congress for this project have been solved though personnel shortages at both LC and WLN continue to plague the project. There has been a request for a no-cost extension on this project, but no decision has been made as to the length of the required extension. Throughout the specification stage of this project, OCLC provided a liaison person who made substantial contributions.

2. As part of the above project, the Council has awarded a grant to the Library of Congress for the internal design work for the transport and session layers of the protocol. That work is nearly complete.

NAME AUTHORITY STRUCTURE

1. The authority portion of the Linked Systems Project has been funded and work is under way to prepare the three systems for the exchange of authority records. The project is expected to be completed, including an operational test of the link, by the end of 1983 or the first quarter of 1984. All three organizations are fully funded and staffed for this project. OCLC has assigned an observer to the Authorities Implementation Project.

2. The Name Authority File Service will be the first implementation of the Linked Systems Project. There has been a significant change in the manner in which this service will be operated. Because in the formative stages of the service LC did not believe it could operate such a service, the Research Libraries Group RLIN system was expected to provide access to the Name Authority File Service. Because of certain technical changes, LC now finds that it can provide the technical management required and is planning to do so. Procedurally, the Name Authority File will be built with the shared contributions of LC and a limited number of other libraries -- initially those involved in the NACO project -- with access to daily changes to the file offered to systems like RLIN, WLN and OCLC. Particulars of operation are being worked out by the Name Authority File Service Task Force.

SUBJECT AUTHORITY STRUCTURE

1. The final large program segment of the BSDP, that of Subject Access/Subject Authority, finally got under way with a meeting of twenty-three experts from libraries and the commercial database sector. A set of recommendations for action resulted, organized by short- and long-term prospects and priorities. There is now substantial agreement on the most useful projects in this area and indications of interest in some of them from qualified institutions and individuals have been received. Several proposals are now under review and some have already been funded.

2. Professor Pauline Cochrane has been working with the Library of Congress Subject Heading Division in an effort to develop a way to feed cross-reference suggestions to LC, to qualify them, and to integrate them into the Library of Congress Subject Headings. To date, the cross-reference procedures within the division have been identified, four institutions (Harvard, Duke, the University of California - Berkeley, and the National Library of Canada) have agreed to send suggestions for evaluation, and over one hundred suggestions have been received at LC. Procedures for qualifying and incorporating the suggestions are being developed and will be tested soon.

CONSER

1. Discussions are under way to find a way for CONSER participants using the RLIN system to contriubte their records to the database on the OCLC system without the need for duplicate keying. Indications are that progress is being made and that a way will be found to accomplish this objective in the near term.

2. The Council and at least two other funding agencies are reviewing an ARL/NFAIS proposal to add to the appropriate CONSER title entries, information concerning which abstract and indexing service covers which CONSER titles. Funding decisions have not yet been made.

3. A small grant has been made to the Boston Theological Institute to support the telecommunication costs of adding theological titles to the CONSER database.

BIBLIOGRAPHIC PRODUCTS AND SERVICES

1. The final reports of the online public access catalog evaluation projects have begun to come in. Once they are received, a decision will be made as to how they should be distributed. They will all be available through ERIC, but there may be an effort to publish a summary of the projects if it seems warranted. Results were reported during ALA in Philadelphia and will be reported, with a more detailed analysis of results, at ASIS - Columbus and ONLINE in Atlanta. These reports will also key a number of meetings of people affected by the results of the project.

2. The data collected in the online catalog study has been analyzed by recognized and respected library researchers. Discussions have been held with the director of a research library to see if the analysis by a library manager would proceed along different lines or would produce different conclusions. No decision on funding this activity have yet been made.

3. The results of the online catalog study and any results from the analysis of the library manager would be used to key a meeting of library managers and online catalog system designers. The topic will be the implications of the study results for libraries and the designers of systems. There will also be a report of a project (see below) to identify the cost factors of various features of online catalogs, in terms of both development and operation.

4. The project to develop a way to share serial cancellation decisions and intentions among those using a common bibliographic database is nearing completion. The project is undergoing test and evaluation among several libraries using the OCLC database through the Pittsburgh Regional Library Consortium. Final results should be available by the end of November.

## COST CONTROL

1. The University of California, Division of Library Automation has received a grant to identify the cost factors associated with the features of online public access catalogs. The resulting report is expected to help key the discussions of system designers and library managers alluded to above.

## USER GUIDANCE AND INFORMATION

1. Another meeting being planned involves those academic and research librarians charged with teaching library users how to use online public access catalogs. Part of the background for this meeting will be the results of the online public access catalog evaluation project. Consideration is also being given to supporting a meeting of public librarians facing the same problem but with a transient ever-changing population.

## APPENDIX F

## COORDINATING PRESERVATION MICROFILMING THROUGH THE ARL MICROFORM PROJECT


### Summary

The Association of Research Libraries is adding a preservation microfilming component to the ARL Microform Project. The National Endowment for the Humanities has awarded ARL a grant by which the Microform Project will investigate preservation microfilming needs in American libraries, create a plan for coordinated action based upon the investigation, and carry out this plan. Jeffrey Heynen—Coordinator of the Microform Project and President of Information Interchange Corporation—will work with ARL staff and preservation consultant Pamela Darling in performing these tasks. He began work in October 1982 and will continue on a part-time basis until May 1984.

The new effort will address preservation needs in North American libraries and historical societies. Like the Microform Project as a whole, it will emphasize building on existing resources and fostering cooperation among individual libraries and historical societies, library consortia, and microform publishers in order to avoid duplication of effort, establish a high level of production output, and assure that preservation microfilming is done as thoroughly, efficiently, and economically as possible.

The project's main objectives are: 1) the improvement of existing bibliographic tools and, if needed, the development of new ones; 2) the establishment of cooperative preservation microfilming projects and the stimulation of new or expanded filming programs in individual libraries, historical societies, and microform publishing organizations; 3) the widespread observance of existing production standards and, if needed, the development of new ones; and 4) the collection of and dissemination information (e.g. statistical and cost data) needed for the administration of preservation microfilming programs.


### Background

In recent years the preservation needs of American research libraries have begun to receive careful evaluation and there are now strong indications that from one-quarter to one-half of their printed-materials holdings have become so brittle that they are no longer fully usable. In fact, it is widely accepted that most of the books published since the mid-nineteenth century will last (or have lasted) no more than 25 to 100 years.

Manual restoration techniques have proven successful in extending the useful life of books, but are too expensive for application to the bulk of materials now in need of preservation. Mass deacidification processes will rescue many books, but since the process cannot reverse deterioration, the content of books already damaged must be captured and preserved. New technologies (such as optical digital disk recording) offer enticing possibilities for preserving content, but with the exception of the Library of Congress's major optical disk program for

currently-published works, their availability for research-library uses is likely to be some years off. For the present and for at least the coming decade, preservation microfilming is the best and most cost-effective method for preserving the information contained in fragile and deteriorating research materials.

Libraries, historical societies, and archives have used preservation microfilming for half a century with considerable success. A number of valuable programs have recently been undertaken in individual institutions, such as the New York Public Library and Harvard University Library. Likewise, a number of coordinated efforts are planned within groups of institutions, including two innovative programs in the Research Libraries Group. The Library of Congress has begun providing valuable training and informational assistance through its National Preservation Program. In addition, microform publishers have long been sensitive to the preservation needs of libraries, producing collections that effectively assure the continued availability of vast numbers of titles.

Despite the usefulness of these efforts, the rate of deterioration is still far greater than the rate of replacement, and increased production output is badly needed. Moreover, current bibliographic tools do not function well enough to avoid costly duplication of effort, and there is unsettling evidence that production, quality control, and storage practices sometimes fall short of the levels required for archival permanence. In addition, the statistics and other management tools that are needed for efficient functioning of filming programs are currently inadequate.

Plan of Action

In undertaking this effort, Jeffrey Heynen will work with Carol Mandel, ARL's Associate Executive Director, with preservation specialist Pamela Darling, and with the staff of ARL's Office of Management Studies. His chief tasks will be to conduct a study of preservation microfilming activities in North American libraries, publishing firms, and historical societies; use the study's findings to create a plan of action; and implement the plan.

The study will gather data through interviews and a mail survey. The plan of action will be developed on the basis of these data, with specific objectives discussed and modified by telephone interviews and by personal consultation with a specially appointed advisory group. The results of the study will be published by ARL.

Specific recommendations will be implemented by Heynen, working with Mandel and Darling. As part of these efforts he will: 1) work toward the establishment of bibliographic mechanisms—available to all preservation filming facilities—by which titles filmed, needing filming, and planned for filming are recorded in machine-readable form and accessible through one or more data bases; 2) initiate and negotiate agreements for cooperative filming programs and stimulate new or expanded filming programs in individual libraries, historical societies, and microform publishing organizations; 3) encourage the observance of existing standards and, if needed, the development of new ones; and 4) assist in establishing guidelines for selection of titles for filming, editorial and production record-keeping, and the preparation of preservation statistics.

ARL's proposal received endorsement at the American Library Association's

Annual Conference in Philadelphia from the Resources and Technical Services Division (RTSD) Board of Directors, the RTSD Preservation Microfilming Committee, the Executive Committees of the RTSD Reproduction of Library Materials and Preservation of Library Materials Section. The award was made by NEH late in September 1982 with work to commence during October.

## The ARL Microform Project

The ARL Microform Project, begun in 1981, is a program designed to improve bibliographic access to microform collections in North American libraries by stimulating and coordinating the work of libraries, microform publishers, bibliographic utilities, and regional networks in providing machine-readable records for millions of monographic titles in microform sets which are now inadequately or insufficiently cataloged. The project emphasizes compliance with national standards, cooperation among libraries and publishers so that as many sets as possible are covered and duplication of effort is avoided, and availability of records to all libraries that want to use them. The project is funded by the Council on Library Resources and the Andrew W. Mellon Foundation.

For more information on the ARL Microform Project or its preservation microfilming component, contact Heynen at the following address:

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APPENDIX G

ATTENDANCE AT 101ST MEMBERSHIP MEETING
ARLINGTON, VIRGINIA

October 13-14, 1982

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York University Libraries
Anne Woodsworth

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| Studer, William J. | Ohio State University Libraries |
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| Taylor, Merrily E. | Brown University Library |
| Toombs, Kenneth E. | University of South Carolina Library |
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| Vassallo, Paul | University of New Mexico Library |
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| Walls, Esther J. | State Univ. of New York at Stony Brook Libs. |
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Pingfeng Chi, Acting Director, Center for Chinese Research Materials

Guests

Russell Bidlack, School of Library Science, University of Michigan - Speaker
Rowland Brown, OCLC, Inc.
Harold Cannon, National Endowment for the Humanities
Joseph Caponio, National Technical Information Service
Eileen Cooke, American Library Association
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Anthony Harrison, Copyright Office, Library of Congress
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David Ladd, Copyright Office, Library of Congress
Deanna Marcum, Council on Library Resources
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APPENDIX H

ASSOCIATION OF RESEARCH LIBRARIES
OFFICERS, BOARD OF DIRECTORS, COMMITTEES AND TASK FORCES

OCTOBER 1982

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APPENDIX I

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Honolulu, Hawaii 96822
Ira Harris, Acting Director
(808) 948-7205

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Hugh C. Atkinson, Univ. Librarian
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Dale M. Bentz, Univ. Librarian
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The Milton S. Eisenhower Library
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Susan K. Martin, Librarian
(301) 338-8325

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James Ranz, Dean of Libraries
(913) 864-3601

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Paul A. Willis, Director
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Kent, Ohio 44242
Hyman W. Kritzer, Assistant Provost
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Daniel J. Boorstin, Librarian
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Larry X. Besant, Director
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George Guidry, Jr., Director
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Montreal, Canada H3A 1Y1
Marianne Scott, Director
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McMaster University Library
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Hamilton, Ontario, Canada L85 4L6
Graham R. Hill, University Librarian
(416) 525-9140 Local 4359

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Canada
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College Park, Maryland 20742
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Richard J. Talbot, Director
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Cambridge, Massachusetts 02139
Jay K. Lucker, Director
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Frank Rodgers, Director
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University of Nebraska-Lincoln Libraries
Lincoln, Nebraska 68588-0410
Gerald A. Rudolph, Dean of Libraries
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The Newberry Library
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(312) 943-9090

University of New Mexico Library
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Paul Vassallo, Dean of Lib. Serv.
(505) 277-4241

New York Public Library
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New York, New York 10018
David H. Stam, Director of the
Research Libraries
(212) 930-0708

New York State Library
Cultural Education Center
Empire State Plaza
Albany, New York 12234
Joseph F. Shubert, State Librarian
(518) 474-5930

New York University Libraries
New York, New York 10003
Carlton C. Rochell, Dean of Libraries
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Northwestern University Libraries
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John P. McGowan, Librarian
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Robert C. Miller, Librarian
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Columbus, Ohio 43210
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University of Oklahoma Library
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Sul H. Lee, Dean, University Librs.
(405) 325-2611 or 2614

Oklahoma State University Library
Stillwater, Oklahoma 74078
Roscoe Rouse, Dean of Lib. Ser.
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University of Oregon Library
Eugene, Oregon 97403
George W. Shipman, Univ. Libn.
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Philadelphia, Pennsylvania 19104
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Stuart Forth, Dean of Univ. Libraries
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Pittsburgh, Pennsylvania 15260
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Princeton University Library
Princeton, New Jersey 08540
Donald Koepp, Director
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Purdue University Library
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Joseph M. Dagnese, Director
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Douglas Library
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Margot B. McBurney, Chief Libn.
(613) 547-5950

Rice University Library
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Houston, Texas 77001
Samuel Carrington, Director
(713) 527-4022

University of Rochester Libraries
Rochester, New York 14627
James F. Wyatt, Director
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New Brunswick, New Jersey 08901
Hendrik Edelman, Univ. Libn.
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Nancy A. Brown, Univ. Libn.
and Director of Libraries
(306) 343-4216

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Washington, D.C. 20560
Robert Maloy, Director
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Columbia, South Carolina 29208
Kenneth E. Toombs, Director of Libs.
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Roy L. Kidman, Librarian
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Kenneth G. Peterson, Dean of
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Libraries
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Saktidas Roy, Director
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Library
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Harold W. Billings, Director
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Texas A&M University Library
College Station, Texas 77843
Irene B. Hoadley, Director
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University of Toronto Libraries
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Marilyn Sharrow, Chief Librarian
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Tulane University Library
New Orleans, Louisiana 70118
Dorothy L. Hagedorn, Acting Univ. Lib.
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University of Utah Libraries
Salt Lake City, Utah 84112
Roger K. Hanson, Director
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Vanderbilt University Library
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Nashville, Tennessee 37203
Keith M. Cottam, Acting Director
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Virginia Polytechnic Inst. and State Univ.
Blacksburg, Virginia 24061
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(703) 961-5593

University of Virginia
Alderman Library
Charlottesville, Virginia 22901
Ray Frantz, Jr., Librarian
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University of Washington Library
Seattle, Washington 98195
Merle N. Boylan, Director
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Allene F. Schnaitter, Director
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St. Louis, Missouri 63130
Charles Churchwell, Librarian
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London, Ontario,, Canada
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